

Study of 1946, 1947, and 1948 business
department graduates of Nashua High
School, Nashua, New Hampshire.

Thesis
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ACTIVITY ANALYSIS AND FOLLOW-UP
1946, 1947, AND 1948 BUSINESS DEPARTMENT
GRADUATES OF NASHUA HIGH SCHOOL, "N"
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A JOB-ACTIVITY ANALYSIS AND FOLLOW-UP STUDY OF
1946, 1947, AND 1948 BUSINESS DEPARTMENT GRADUATES
OF NASHUA HIGH SCHOOL, NASHUA, NEW HAMPSHIRE

Submitted by

Mary Agnes Ryan

(B. S., University of New Hampshire, 1943)

In partial fulfillment of the requirements for
the degree of Master of Education

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CHAPTER I

INTRODUCTION

Statement of the Problem

The major purpose of this study was to evaluate the program of instruction in office skills and job counseling services offered students and graduates of the vocational business education curriculum of Nashua High School, Nashua, New Hampshire, by means of a survey of occupational adjustment activities, and an analysis of the office-job activities of recent graduates. The specific purpose of the study was to determine which skills and abilities were most commonly used by high school graduates in beginning office jobs, and whether school preparation was adequate for reasonably satisfactory job adjustment in the opinion of graduates.

Analysis of the Problem

In order to determine the proportion of graduates who have used their business training in actual office job situations since graduation, and the extent to which those still employed in office jobs were successful, answers to the following questions were sought:

1. What proportion of 1946, 1947, and 1948 business course graduates have entered jobs for which high school training attempted to prepare them?
2. How soon after graduation have graduates been placed in office jobs?

3. Through what sources have graduates secured first office jobs?

4. Do recent graduates feel that school placement and job counseling services should be extended to serve their needs?

5. How successful have graduates been in securing recognition in the business community as evidenced by increased remuneration over starting salary or wage?

6. To what extent have graduates been able to adjust to their beginning jobs as evidenced by the proportion still working for original employers?

7. What percentage of graduates have received post secondary business training?

8. Was high school training adequate for success on present office jobs in the opinion of graduates?

9. What is the distribution of jobs held by graduates with respect to:

(a) number employed in large and small offices?

(b) types of business concerns employing high school graduates for office jobs?

10. Which office duties and activities are most frequently performed on beginning office jobs?

11. Which of the most frequently performed activities are the most significant from the standpoint of comparative time spent in performing them and the feasibility of offering school training?

12. Which are the most frequent duties in the individual subject areas of typing, bookkeeping, stenography, office machines, and filing?

13. Which office machines are most commonly used by recent graduates?

14. What is general attitude of graduates toward high school training as revealed in comments and suggestions offered for improving school preparation?

Justification of the Problem

Up to the time of this study, no office-job activity analysis had been made in Nashua, or used as a basis for organizing or revising the business education curriculum. The main objective of vocational business education at Nashua High School is in complete agreement with the following statement by A. O. Colvin¹ of Colorado State College of Education:

The school should make it possible for pupils to get all the information and skills that are required to qualify them for beginning positions such as billing machine operators, calculating machine operators, clerical bookkeepers, transcribing machine operators, duplicating machine operators, filing clerks, general office clerks, posting machine operators, retail sales persons, stenographers, or typists.

Since the probable future occupational needs of students in the business curriculum will depend in large measure upon what local business offices require from their beginning workers, a survey of office activities being performed by such workers was necessary. The business department has based courses of study and teaching emphasis solely on recommendations set up by traditional programs of study. These courses of study have value,

¹Colvin, A. O., "A Statement of Objectives," The American Business Education Yearbook, III, Eastern Commercial Teachers Association, New York, 1946, p. 15.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It also mentions the results of the various expeditions and the collections made.

2. The second part of the report deals with the results of the various expeditions and the collections made. It mentions the names of the various expeditions and the names of the collectors.

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but should be subjected to periodic evaluation in the light of community office-job activity analyses if they are to be effective in meeting the employment needs of students.

A few expressions of the attitudes of educational authorities as to what measures should be taken by those responsible for preparing students for office occupations are typical of the frequently recurring statements made in business education publications over a period of recent years.

One of the first educators concerned with this need was W. W. Charters, then at the University of Pittsburgh. Lomax¹ quotes Charters on this point as follows:

Out of business activity analysis we should select the subject matter of business education. Because only a few of many life projects can be taught in school, it is necessary to set up selective machinery. The analysis of life activities and their control give us a great mass of information, skills, and duties to master, and in teaching we have to determine which are the most important and which are the most difficult.

Supplementing this statement, Lomax² elaborates by explaining that the problem of activity analysis in business education resolves itself into a practical problem of occupational analysis which is a method of determining the component elements of an occupation in relation to the qualifications of the worker who performs the occupational duties.

More recently V. H. Carmichael, nationally known business education leader, expressed the following opinion:

There is a consensus among those who organize and build curricula for office machine and clerical instruction that

¹Lomax, Paul S., Commercial Teaching Problems, Prentice-Hall, Inc., New York, 1929, p. 16.

²Ibid., p. 73.

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these curricula should be determined largely by the nature of the work of those business firms in which graduates of respective schools find employment. In determining the nature of the office work which the respective employees will need to do, it will be necessary to find out the duties which they will have to perform on the job, the kinds of machines which they will have to use in performing these duties, and the degree and kinds of skills which they will have to acquire for initial placement.

There is rather common agreement among business educators that the best way to find out about the nature of office work is by the survey method, and that the local survey finds out the needs in the local community. It determines the exact kinds of machines which are being used by the local business firms; it secures information concerning the degree and kinds of skills which are demanded of applicants who are just out of the local school.¹

Potter² in a recent office-activity analysis report observes that business educators have found the complexity of the tasks performed by office workers a discouraging element, and that therefore there has been no satisfactory development of job analysis in business education as a basis of curriculum construction in schools. Even though job analysis surveys, in the strict meaning of the term, do not lend themselves to the school follow-up type of survey, the job-activity type of study made in the form of a follow-up of the occupational activities of former students is feasible, and with all its understandable defects can be the source of very useful information. It offers a much more objective approach to the setting up of new, or the revision of current courses of study than could be

¹Carmichael, Vernal H., "Research Needed in Field of Office Machine and Clerical Instruction," National Business Education Quarterly, Spring, 1942, pp. 22-23.

²Potter, Thelma, An Analysis of the Work of General Clerical Employees, Bureau of Publications, Teachers College, Columbia University, 1944, p. 100.

obtained otherwise.

The New Hampshire State Department of Education makes the following recommendation to business teachers of vocational terminal courses:

Teachers in the terminal courses should know what employers expect in their own locality; which concerns use calculating machines, and which processes should be stressed; which firms use dictating machines and what the standards are.¹

While this study did not undertake to make a direct analysis of firms using the various types of office equipment, it did indirectly make such an analysis by finding out the types of equipment used by graduates actually at work in the community. It was felt that a knowledge of equipment used by firms employing high school graduates would give more useful information than would a knowledge of equipment used by firms chosen indiscriminately.

The results of this survey can be used (1) by teachers of business skill subjects in revising current courses of study and in deciding where to place emphasis in teaching; (2) by the job counselor of business education seniors by giving her a better understanding of the needs of young office workers; (3) by students as a means of determining which skills are most frequently demanded on the job; (4) by the business department head in making recommendations to school board for equipment and supplies; and (5) by guidance counselors in providing up-to-date information on available opportunities for employment in office clerical occupations by graduates of business education curriculum.

¹Program of Studies, State Board of Education, Concord, New Hampshire, 1942, pp. 63-64.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation and the second section deals with the progress of the work.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work in the field and the second section deals with the results of the work in the laboratory.

3. The third part of the report deals with the conclusions of the work during the year. It is divided into two main sections: the first section deals with the conclusions of the work in the field and the second section deals with the conclusions of the work in the laboratory.

4. The fourth part of the report deals with the recommendations of the work during the year. It is divided into two main sections: the first section deals with the recommendations of the work in the field and the second section deals with the recommendations of the work in the laboratory.

5. The fifth part of the report deals with the summary of the work during the year.

Delimitation of the Problem

This study was limited to a survey of the occupational activities of 150 former business education students who received three years of business training in high school, and who were graduated during the three post war years 1946, 1947, and 1948.

No attempt was made to include a survey of desirable attitudes and personality traits since many adequate studies have been made in this area, notably the studies conducted by Charters and Whitley,¹ Nichols,² and Santamaria,³ which are readily available and well known. Unlike office skill activities, which tend to vary with different types and sizes of communities, personality and character traits required for success in office jobs of various types are much the same in all communities.

The study was not concerned with job classifications or with the degree of specialization on individual jobs since this type of approach was not likely to yield the type of data which would lend itself to adaptation to the public school situation involved. The following statement expresses this attitude more clearly:

It is true that frequently there is some correspondence between payroll names and duties, but in a few cases only is there sufficient uniformity to warrant the assumption that a

¹Charters, W. W. and Whitley, Isadore B., Analysis of Secretarial Duties and Traits, Williams and Wilkins Co., Baltimore, 1924, 186 p.

²Nichols, Frederick G. and others, A New Conception of Office Practice, Harvard University Press, Cambridge, 1927, 123 p.

³Santamaria, Catherine, Job Analysis of Office Services Performed by Office Workers in Small Communities, Master's Thesis, Boston University, 1941, 206 p.

General Introduction

The purpose of this study is to investigate the effects of the proposed system on the performance of the system. The study is divided into two main parts: a theoretical analysis and an experimental evaluation. The theoretical analysis is based on the principles of the system and the experimental evaluation is based on the results of the experiments.

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pupil can be trained for a selected, standardized payroll job with any appreciable degree of certainty that he will obtain such a job and be called upon to perform only the duties for which he has thus been trained.¹

On the subject of specialization, Nichols² has this to say:

The theory that the general clerk disappeared with the coming of big business is quite universally accepted. From the standpoint of commercial education, this theory is not borne out by facts as represented in many occupational survey reports As far as the business curriculum is concerned, these special jobs may safely be ignored.

No doubt in very large communities, where very large businesses are concentrated, the work in offices does tend to be specialized as brought out in the recent study by Dr. Potter,³ but in the smaller community, this most likely is not the case as Dr. Nichols indicates. Consequently, this study will confine itself to a duty and activity analysis rather than attempt a strictly job analysis.

Definition of Terms⁴

Activity Analysis: The breaking down of large scope behaviors into specifics.

Job Analysis: The determination of the skills and items of knowledge that a worker must possess in order to do a specific job and the arranging of these in logical teaching order.

¹Nichols, F. G., Commercial Education in the High School, D. Appleton-Century Co., Inc., New York, 1933, pp. 304-305.

²Ibid.

³Potter, op. cit., p. 30

⁴Good, Carter V., Editor, Dictionary of Education, McGraw-Hill Book Co., Inc., New York and London, 1945.

Vocational Education: A program of education organized to prepare the learner for entrance into a particular chosen vocation.

Business Education: That area of education which develops skills, attitudes, and understandings essential for the successful direction of business relationships.

Business Subjects: The subjects that prepare either directly or indirectly for successful participation in business activities.

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CHAPTER II

BACKGROUND OF THE STUDY

Nashua, New Hampshire, is an industrial community occupied mostly with the manufacture of shoes, textiles, paper and asbestos products, and paper-making machinery. It is also concerned to a lesser degree with the carrying on of numerous other types of smaller processing and manufacturing industries. It is definitely a community of varied industrial activity. Mercantile, financial, and service-type offices are located in this city. Nashua has a population of 34,000 and serves as a trading center for an additional 30,000.

The public school system in Nashua operates on the six-three-three plan, with grades ten, eleven, and twelve making up the senior high school. In 1948-1949 Nashua Senior High School had a total enrollment of 1050 students; 330 of these were in vocational business courses. Of this number, 190 were in Grade X, 90 in Grade XI, and 50 in Grade XII.

The following are the required and elective business training subjects offered students in a single business education curriculum in the senior high school:

GRADE X

<u>Required</u>	<u>Length of Course</u>	<u>Credit</u>
Arithmetic	2 semesters; 180 45-minute periods	1
*Typewriting I	2 semesters; 180 45-minute periods	1/2

GRADE XI

<u>Required</u>	<u>Length of Course</u>	<u>Credit</u>
Bookkeeping	2 semesters; 180 45-minute periods	1
*Typewriting II	2 semesters; 180 45-minute periods	1/2

Elective

Stenography	2 semesters; 180 45-minute periods	1
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GRADE XII

<u>Elective</u>	<u>Length of Course</u>	<u>Credit</u>
Clerical Office Practice or Secretarial Office Practice	2 semesters; 360 45-minute periods	1

Courses marked by an asterisk are single-period courses in which no homework is required; consequently, only one-half credit is allowed.

The following office machine equipment is available for training purposes:

- 117 typewriters (standard)
- 10 key-driven calculators
- 2 rotary-type calculators
- 3 Burroughs adding-listing machines
- 3 mimeograph machines
- 1 mimeoscope
- 1 checkwriter
- 3 Ediphones
- 1 Dictaphone
- 1 record-shaving machine
- 1 telephone (outside connection)

The first two years of the high school business training program are devoted to developing basic skills in figuring, typewriting, bookkeeping, and stenography. During the twelfth year, a course is offered seniors which attempts to integrate these fundamental skills and apply them in performing assignments which are typical of actual office situations.

Graduates of the business education curriculum are required to complete 17 units of credit for graduation instead of the usual 16 units required of other graduates. Of these 17 units, only 3 credits are required in vocational business subjects, leaving a possible 14 credits to be earned in the field of general education.

During Grade XII, as graduation time approaches, job counseling and referral activities begin and continue through graduation. Records are kept of these activities in the form of individual card files. After graduation, no more is done for the graduate with the exception of unplanned and incidental contacts made with graduates and employers. When employers call for new employees near the end of each school year, the opportunity is used to check on the the success of graduates previously placed in their offices. This checking is incidental, however, and no set plan is followed.

Two post secondary institutions of excellent standing and reputation are located in the community, both of which admit business graduates to day or evening classes offering advanced business education courses. One of these is a four-year, degree-granting, college. The other is a private business school, offering one- and two-year day courses, as well as evening courses.

In accordance with the generally accepted philosophy of modern public school education, which places on the school the responsibility for assisting all graduates to enter successfully into adult occupations, the business education department of Nashua High School has undertaken to evaluate its program of instruction and job counseling services to its students by means of a follow-up and job-activity analysis study of its recent graduates.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical analysis performed.

3. The third part of the document presents the results of the study. It includes a series of tables and graphs that illustrate the findings of the research. The data shows a clear trend of increasing activity over time.

4. The fourth part of the document discusses the implications of the findings. It suggests that the results have significant implications for the field of study and may lead to further research in this area.

5. The fifth part of the document concludes the study. It summarizes the main findings and provides a final statement on the importance of the research.

CHAPTER III

REVIEW OF RELATED STUDIES

Job activity studies in the field of education have not been numerous. While government and industry have used and still continue to use abundant resources to carry on carefully laid out scientific job-analysis programs, schools have not been able to keep pace. Data available from Government and industrial surveys, while useful to a limited extent, have not been set up for educational purposes but rather for use in public and private employment situations.

The terms "job analysis" and "job-activity analysis" are not synonymous. The difference is explained by a prominent business educator in the following statement:

The term "job analysis" as used in business connotes the limitation of the analysis to a particular operation within an occupation. In education, however, the use of the term is less restrictive and more liberal in its interpretation.¹

Another distinguished educator, and one of the pioneers in the adaptation of job-analysis techniques to the needs of education, has this to say on this subject:

Job-analysis is a term which smacks of its origin. It has been taken over from the industrial field where the job is the unit of operation. The term is used rather loosely, and in its application to the general education field, it has come to include not only the manual operations, but activities, duties, and problems. The functions of job analysis are to determine what activities are carried on by individuals in the performance of tasks. It is a deliberate attempt to

¹Potter, op. cit., p. 12.

apply the methods of analysis to activities from the functional point of view As a method of curriculum construction, it frankly assumes that the function of a curriculum is to provide material for efficient performance, conduct, and behavior The analyst who adopts the functional point of view in curriculum construction merely makes a wholehearted attempt to apply analysis thoroughly to the situation which he is studying. The term "functional analysis" is a better name than is "job analysis" with its restricted connotations.¹

Several studies have been carried on by educators, however, which were designed specifically for use in planning educational programs. Two of the best known studies were carried on during the 1920's, both of which were sponsored and financed by private and semi-private organizations. One of these was conducted under the direction of W. W. Charters² then of the University of Pittsburgh. This study, sponsored by the National Junior Personnel Service, was carried on an extensive scale by six individuals under the leadership of Dr. Charters, and was completed in 1924. Anna Y. Reed, then director of the National Junior Personnel Service, was largely responsible for inspiring this survey. It involved a study of the activities of 108 selected successful secretaries. A list of 871 office activities and 48 mental and character traits were rated by these secretaries and those most frequently rated as needed on the job were listed according to frequencies. Check lists and personal interviews were used to obtain data. While the study was of great use to secretarial

¹Charters, W. W., "Functional Analysis as the Basis for Curriculum Construction," Journal of Educational Research, Vol. 10, October, 1924. pp. 219-220.

²Charters, W. W. and Whitley, Isadore B., Analysis of Secretarial Duties and Traits, Williams and Wilkins Co., Baltimore, 1924, 186 p.

training institutions in 1924, it does not meet the needs of clerical training programs in 1949. There is much valuable reference material in the way of research procedures employed in this study, which would be very useful to anyone making a current research study of the job-activity analysis type.

The second of these earlier studies was made under the sponsorship of the Harvard Graduate School of Education in cooperation with the National Office Managers Association, and was directed by Dr. Frederick G. Nichols, then of Harvard University School of Education.¹ This study was also very extensive in scope and covered 4336 office clerks employed by 54 business organizations located in 16 states. The following types of business were included: manufacturing, insurance, public utility, retail, private service corporation, publishing, printing, educational, and real estate. This study resulted in bringing very forcibly to the attention of business educators the fact that traditional secretarial, bookkeeping, and typewriting training had been vastly overemphasized. The survey showed that by far the greatest percentage of young workers were engaged in the field of general clerical work. Only about 10 per cent of young workers were employed as stenographers, although a substantial part of the school training program for all office workers was given over to stenographic training. A similar situation was known to exist in the bookkeeping area. This study was also concerned with differentiating the most frequently performed activities into those which should be included in school preparation and those which should be prepared for entirely on the job.

¹Nichols, A New Conception of Office Practice

A third outstanding study of the office-activity analysis type was made by Thelma M. Potter¹ in 1943. An analysis was made of the characteristics of the work of the general clerical worker in very large offices located in big metropolitan cities, such as Baltimore and New York City. Employees performing activities representative of the various kinds of general clerical work were chosen for study from the five types of businesses employing the largest percentage of general clerical employees in the United States. Personnel and office managers from similar types of businesses were interviewed to secure data concerning the duties and in-service training of these workers. Time-analysis charts were constructed in order to facilitate the study of the distribution of time spent by the selected employees on the various activities reported. These charts consisted of an information blank and five charts upon which was recorded daily all work performed under the five classifications of typewriting, filing, adding-calculating machines, miscellaneous machines, and non-specialized clerical work. Interview forms were constructed upon which was recorded the information secured during interviews with office managers.

Through the assistance of office and personnel managers, cooperation was secured from office supervisors in checking the accuracy of completed time-analysis charts.

The outstanding conclusions arrived at by Dr. Potter as a result of this study were as follows:

1. The work of the general clerical employee in large businesses is specialized; however, the work done in the jobs falling under the

¹Potter, An Analysis of the Work of General Clerical Employees

general clerical classification requires many skills in common.

2. Over 85 per cent of the work of beginning general clerical employees in large businesses involves the skills of typewriting, filing, and non-specialized clerical work. The remainder of time is spent in filing activities, operating adding-calculating machines, and miscellaneous office machines.

3. The typewriting of forms accounts for over one third of the total time spent in typewriting by general clerical workers; the remainder of the time is distributed among the following activities in the order presented: form letters, straight copy, envelopes, billing, rough drafts, dictation to the machine, cards, and tabulations.

4. The alphabetic and numeric systems of filing are used more commonly than any others by general clerical workers.

5. Over one half of the total time utilized by general clerical workers in the operation of adding-calculating machines is spent in the operation of adding-listing machines. The remainder of the time is spent in operating rotary and key-driven calculators.

6. Duplicating machine operation forms but a minor part of the usual office routine for the typical general clerical worker in large businesses.

Although this study revealed some very significant facts as to the distribution of clerical activities in the large industrial, financial, and government offices, it offers insufficient data to meet the needs of the individual, small or medium-sized community of 30,000 to 50,000 population located outside commuting distance of a metropolitan center.

An analysis of office job activities combined with a four-year follow-up study of the 1927 graduates of business education departments of four Baltimore high schools was made in 1933 by K. T. Coan.¹ Conducted on a much smaller scale than any of the preceding three studies, this study was concerned with learning what were likely to be the needs of future beginning office workers as determined by job requirements of graduates in office occupations. One hundred thirty-one graduates responded to questionnaires which were mailed out to 300 business graduates. The following information was sought:

1. Graduate opinion as to the adequacy of high school preparation.
2. The degree to which additional business courses were needed beyond high school for job success.
3. What were the principal duties performed by graduates in office jobs.

The major findings of the survey showed that (1) business curricula in Baltimore high schools were too narrow to meet needs of graduates on the job; (2) more training in commonly used office machines was necessary; and (3) there was need for more careful guidance of students into business education courses.

Santamaria,² in 1941 made a survey in the form of an office-activity analysis of selected office workers in three communities of 8000 to 10,000

¹Coan, K. T., A Four-year Follow-up Study of the Commercial Graduates of June, 1927, of Baltimore Senior High Schools, Master's Thesis, Boston University, 1933, 82 p.

²Santamaria, Job Analysis of Office Services Performed by Office Workers in Small Communities

population with the purpose of determining curriculum content in high school business courses in small communities. One hundred sixty-eight employees and 78 employers were included in this survey. These were selected to cover all major types of businesses and industries in the three communities involved. Interview and check-list methods of research were used in gathering data. Sponsorship of two of the three high schools in the area surveyed was secured.

The major findings and conclusions follow:

1. Stenographic and clerical duties were predominant in office workers' daily schedule.
2. There was little disagreement between the employee and employer groups on the relative frequencies and importance of various duties performed, and character traits required for job success.
3. The majority of business workers receive their business training in high school.
4. Bookkeeping duties rank high as to frequency of performance.
5. The majority of both employee and employer groups felt that training in composing letters should take place on the job rather than in school.
6. Development of desirable personality traits was considered important but skills and technical abilities should be of first importance.
7. Vocational business training courses should be recommended to pupils having high native intelligence and maturity of judgment.
8. A functioning placement service which cooperates with business should be an important part of the high school commercial curriculum.

Miss Santamaria felt that there was need for more studies of this type in small and medium-sized communities.

All of the above studies and analyses have brought out important facts of considerable interest to all who are concerned with the training of future office workers. Nevertheless, none of these mentioned surveys covered an analysis of the office activities of the small city of 30,000 population, in which is located a variety of industrial types of concerns and offices.

While this study has been concerned with an office-activity analysis, the analysis portion of the study has been only one of the devices selected as a means of evaluating the business education program offered Nashua High School students. The follow-up of graduates in any community must of necessity be a problem individual to that particular locality. Much help and assistance can be secured from related research done by others, but it remains for those responsible for setting up and maintaining adequate business education curricula to evaluate their individual efforts in the most objective ways possible, including the periodic follow-up of the occupational activities of its graduates.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is essential for the proper management of the organization's finances and for ensuring transparency in all dealings.

2. The second part of the document outlines the various methods used to collect and analyze data. It describes how this information is used to identify trends, assess performance, and make informed decisions about future operations.

3. The third part of the document provides a detailed overview of the organization's current financial status. It includes a breakdown of income, expenses, and assets, as well as a comparison of these figures to the previous year's data.

4. The fourth part of the document discusses the challenges faced by the organization in the current market environment. It highlights the need for innovation, flexibility, and a strong focus on customer service to remain competitive.

5. The fifth part of the document presents a series of recommendations for improving the organization's overall performance. These include suggestions for streamlining processes, investing in new technology, and enhancing the skills of the workforce.

6. The sixth part of the document provides a summary of the key findings and conclusions of the study. It reiterates the importance of accurate record-keeping and the need for continuous improvement in all areas of the organization.

7. The seventh part of the document includes a list of references to the various sources of information used in the study. This allows readers to verify the data and explore the topics in more depth if they wish.

8. The eighth part of the document is a concluding statement that expresses the author's confidence in the findings and their potential impact on the organization's future success.

CHAPTER IV

METHOD OF PROCEDURE

The specific purpose of this study as stated in Chapter I was to ascertain the office skills and activities engaged in by beginning office workers who were graduated with three years of business training at Nashua High School during the years 1946, 1947, and 1948. The study was also concerned with learning the job-adjustment activities of the 150 graduates included in this group.

The following briefly outlines the steps taken to accomplish the above purposes:

1. Permission and approval of school authorities secured
2. Analysis made of related literature in the field of job-activity analysis
3. Data sheet, and check list selected as media for collecting data
4. Data sheet and check list mailed out to 150 graduates accompanied by letter of transmittal
5. Follow-up made by telephone of those not responding within first three weeks after mailing
6. Data obtained from returned data sheets and check lists compiled and tabulated
7. Summary and conclusions resulting from study of data obtained listed and outlined
8. Suggestions and recommendations stated

Before actual work was begun in carrying out the study, approval of the survey and permission to use the name of the school was secured from the local high school headmaster, the acting superintendent, and the acting assistant superintendent of schools. All of these individuals expressed themselves as very much in favor of the plan.

Related studies made in the field of job-activity analysis by business educators were surveyed, and those which made the most worthwhile and useful contributions to the needs of vocational business education were selected for careful analysis and study. Chapter III contains a report on these studies.

After approval was obtained for conducting the study, and the background reading of related literature was completed, the next step was to select the best workable media for collecting necessary data. Two types of information were required for the satisfactory completion of the study:

1. Personal information dealing with job-securing, and job adjustment experiences of graduates
2. Detailed information of specific activities performed on the various jobs.

To secure the first type of data, a questionnaire form was decided upon after the possibility of interviewing 150 graduates was found to be infeasible. For psychological reasons the questionnaire was labeled "Data Sheet." The content of the data sheet was restricted to questions essential to determining answers to the following questions listed previously in Chapter I, and considered to be important in making an

adequate evaluation of the business education program:

1. What proportion of 1946, 1947, and 1948 business graduates have entered jobs for which high school training attempted to prepare them?
2. How soon after graduation have graduates been placed in office jobs?
3. Through what sources have graduates secured first office jobs?
4. Do recent graduates feel that school placement and job-counseling services should be extended to serve their needs?
5. How successful have graduates been in securing recognition in the business community as evidenced by increased remuneration over starting salary or wage?
6. To what extent have graduates been able to adjust to their beginning jobs as evidenced by the proportion of graduates still working for original employers?
7. What percentage of graduates have received post-secondary business training?
8. Was high school training adequate for success in the opinion of graduates?

Questions were also included in the data sheet which would assist the investigator in learning the distribution of office-working graduates in various types of business concerns, and in large and small offices, in order to determine which concerns and which types of offices hire high school business graduates.

Inasmuch as the major purpose of this study was to ascertain those activities most commonly performed by recent graduates in office jobs,

a "Check List" was selected as the best type of instrument for gathering the type of data indicated in item 2 listed above, namely, "detailed information of specific activities performed on the various jobs." The 82 activities included in the final form of the check lists sent out were based on the following source material:

1. Check lists used in the Charters and Whitley¹ study and the Santamaria² study referred to in Chapter II
2. Investigator's own personal experience as an office worker and teacher of business subjects
3. Suggestions from four friends who are office supervisors in the larger type business offices in the local community
4. Suggestions from ten members of the senior office practice class in Nashua High School, who have been employed part- or full-time during the preceding year
5. Suggestions from other teachers in the business department.

To facilitate the filling of blanks by the graduates, the list of activities was grouped into six major classifications headed "Typing," "Bookkeeping," "Stenographic and Secretarial," "Office Machines," "Filing," and "Other Office Activities."

A check list that would merely indicate that an activity was performed, without regard to frequency of performance, or the time involved in performing it, would not yield very reliable information. A means

¹Charters and Whitley, Analysis of Secretarial Duties and Traits

²Santamaria, loc. cit.

for indicating on the check list the approximate time given to the activity, or approximate frequency of recurrence, was considered desirable. Asking the young and busy office worker to keep an accurate time chart, indicating the approximate amount of time spent on every activity performed on the job, was not thought the best workable approach. Even if getting such a time report from the majority of graduates were possible, that time report by itself would not be as important a factor in deciding the relative significance or insignificance of a given office activity, as would the frequency of activity recurrence. For instance, in the case of "taking dictation and transcribing," the fact that this activity was performed "often through the week" would be more significant in determining relative importance of activities of similar frequency than would the knowledge that it was performed for so many hours a month or year.

Provision was made for placing a check mark opposite each activity performed under one of the following five headings: "Done more than half of every day," "Done less than half of every day," "Done often through the week," "Done occasionally through the week," "Done monthly or less often." Time was involved in the data thus obtained, but it was not the only determining factor.

Further discussion of this section of the check list with five selected graduates as to whether indicating the approximate frequency of performance would be easier to handle than would reporting time spent in doing each activity, brought forth the unanimous opinion that it would.

After provision was completed for preparing a measure of frequency, and the significance of various duties performed, the instrument was

further refined in order to make it possible to determine whether, in the opinion of office workers, the various activities performed should be learned in school, on the job, or both in school and on the job. Again the Santamaria¹ study was found to be an excellent source of reference, and the manner of handling this phase of the check list was suggested by her procedure.

Consequently, the check list form was further modified to include a provision for checking each activity performed under one of each of the following headings:

1. The approximate frequency of recurrence of the activity or duty.
2. Should this be taught in school, on the job, or both in school and on the job?

To determine any weaknesses which might be discovered in the questions and/or directions, members of the senior office practice class who had part- or full-time office experience were asked to fill out mimeographed copies of the data sheet and check list before they were finally mailed out to graduates. As a result of their comments and criticisms, a few minor changes were made in the forms.

A letter of transmittal was prepared, explaining the purpose of the study to the graduates, and soliciting their cooperation in providing data necessary for satisfactory completion of the study.

The data sheet, check list, and letter of transmittal forms were submitted to the high school headmaster and local school superintendent for approval.

The first part of the paper is devoted to a discussion of the
theoretical aspects of the problem. It is shown that the
problem is equivalent to a problem in the theory of
partial differential equations. The second part of the paper
is devoted to a discussion of the numerical aspects of the
problem. It is shown that the problem can be solved
numerically by using the method of finite differences.
The third part of the paper is devoted to a discussion of
the results of the numerical calculations. It is shown that
the results are in good agreement with the theoretical
results. The fourth part of the paper is devoted to a
discussion of the conclusions of the paper. It is shown
that the problem can be solved numerically by using the
method of finite differences. The fifth part of the paper
is devoted to a discussion of the conclusions of the paper.
It is shown that the problem can be solved numerically
by using the method of finite differences. The sixth part
of the paper is devoted to a discussion of the conclusions
of the paper. It is shown that the problem can be solved
numerically by using the method of finite differences.

Copies of the data sheet, check list, and letter of transmittal were mailed to 150 business graduates of the classes of 1946, 1947, and 1948, the first three post-war years. The activities of these graduates tended to represent a more normal situation than would the activities of the graduates of the years preceding 1946. Stamped and addressed return envelopes were enclosed with the letters sent out.

Names and addresses of the graduates were secured from the business department files, which contain the names and addresses of all former as well as present students. While it was fairly well known that certain graduates were married and at home, and that others had moved away or changed occupations, forms were mailed out to all 150 graduates.

The distribution by classes was as follows:

1946	-	46 graduates
1947	-	51 graduates
1948	-	<u>53</u> graduates
Total	-	150 graduates

Forms were mailed out on April 20, 1949, and within one week, 65 returns were received. During the next two weeks an additional 33 returns were received. Contacts by telephone were made during the fourth and fifth weeks after mailing with 48 of those not having replied up to that time, or with relatives or friends, and as a result, 36 more returns were received during the fourth, fifth, and sixth weeks after mailing.

The following table shows that out of 150 questionnaire forms mailed, 134 were received back. Seventeen of the 134 sent in data sheets only. One hundred seventeen graduates returned both data sheet and check

list forms. Of those returning data sheets only, six were at home, five were attending business schools, one was attending art school, two were studying nursing, two were telephone operators, and one was an invalid.

Table I

RETURNS FROM QUESTIONNAIRES

Time	Number	Per cent of Returns
End of first week	65	43
End of third week	98	65
End of sixth week	134	89

Table II

RETURNS FROM QUESTIONNAIRES BY CLASSES

Class	Number Sent Out	Number Received	Per Cent of Returns
1946	46	40	86
1947	51	44	86
1948	53	50	94

Table II shows that the returns were well balanced between the classes. As was expected, 1948 graduates yielded the largest percentage of returns.

The first of these is the fact that the
 system is not a simple one, and the
 second is that it is not a simple one.

(1)

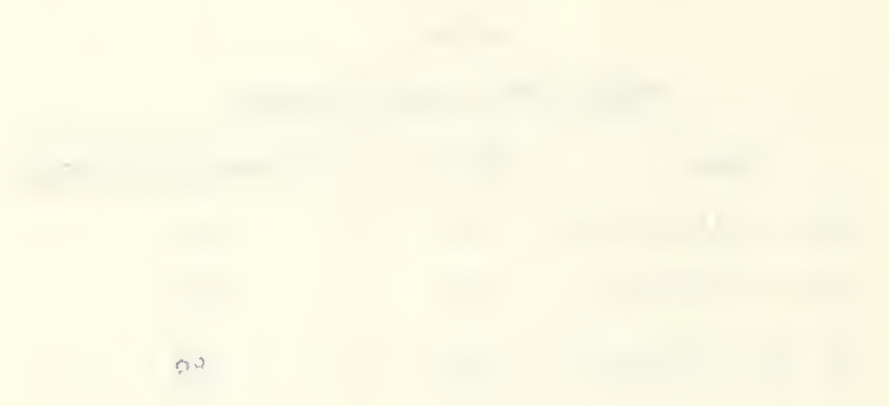


Table 1			
Year	1980	1981	1982
1	100	100	100
2	100	100	100
3	100	100	100

The third of these is the fact that the
 system is not a simple one, and the
 fourth is that it is not a simple one.

(2)

CHAPTER V

RESULTS OF RETURNS FROM DATA SHEETS

As previously stated the data sheet was used as the medium for obtaining information concerning job-securing and job-adjustment activities of one hundred fifty 1946, 1947, and 1948 business department graduates of Nashua High School. Since 134 graduates replied to the data sheet questionnaire, representing 89 per cent of the total number sent out, it was felt that compilations of these returns should provide very significant information.

Distribution of these 134 returns was made first to determine the number employed in office work since high school graduation.

Table III

NUMBER EMPLOYED IN OFFICE WORK
SINCE GRADUATION

Class	No. of Returns	No. in Office Work	Per Cent
1946	40	35	88
1947	44	41	93
1948	50	47	94

One of the first important facts revealed by a study of returns was that a very substantial proportion of business graduates was employed in occupations for which high school training specifically prepared them. Tables III and IV show that more than 85 per cent of the members of each

The first of these is the fact that the
 results of the experiments are in general
 in good agreement with the theoretical
 predictions. This is particularly true in
 the case of the first two experiments, in
 which the results are in good agreement
 with the theoretical predictions. In the
 case of the third experiment, the results
 are in good agreement with the theoretical
 predictions, but the results of the fourth
 experiment are in poor agreement with
 the theoretical predictions. This is due
 to the fact that the results of the fourth
 experiment are in poor agreement with
 the theoretical predictions.

TABLE I

RESULTS OF EXPERIMENTS

Experiment	Time (sec)	Distance (cm)	Velocity (cm/sec)	Acceleration (cm/sec ²)
1	10	100	10	1
2	20	400	20	4
3	30	900	30	9
4	40	1600	40	16

The results of the experiments are in good
 agreement with the theoretical predictions.
 This is particularly true in the case of
 the first three experiments, in which the
 results are in good agreement with the
 theoretical predictions. In the case of
 the fourth experiment, the results are in
 poor agreement with the theoretical
 predictions. This is due to the fact that
 the results of the fourth experiment are
 in poor agreement with the theoretical
 predictions.

of the three classes making returns were engaged in office-type occupations since graduation. No doubt, the ideal business conditions which have prevailed in the local community during the years 1946, 1947, 1948, and 1949 affected the returns, but the fact remains that the graduates found employment in the field for which they had prepared.

Table IV
DISTRIBUTION OF PRESENT OCCUPATIONS

Occupation	Number	Per cent
Office-type jobs	117	87.3
Non-office-type jobs	4	2.9
Married and at home	6	4.4
Full-time students	6	4.4
Invalid	<u>1</u>	<u>.7</u>
Total	134	99.7

How graduates received their first office jobs was considered important in making an evaluation of the high school business education program. Sixty-six per cent of those replying stated that they received their first jobs through school referrals, a reasonably satisfactory indication that the school was fulfilling its obligations in this respect to its graduates. Sixteen per cent of the respondents reported that they had received their first jobs through personal application direct to employers; 9 per cent through relatives or friends; 6 per cent through

Government agencies; and 3 per cent through other sources.

Table V
SOURCES THROUGH WHICH GRADUATES
OBTAINED FIRST OFFICE JOBS

Source	Number	Per cent
School referral	82	66
Personal application direct to employer	20	16
Relatives or friends	11	9
Gov't. employment agency	7	6
Other sources	<u>3</u>	<u>3</u>
Total	123	100

The data in Table V may be considered to show that fairly adequate training was given in job-finding procedures to those involved in this study.

The ability of young workers to adjust themselves successfully to initial adult occupational life can also be measured by the time they require to find a market for their skills. Table VI shows that 120 out of 125 graduates were employed in less than six months after graduation, proving either that an unusual demand existed for office workers, or that the school developed in its business graduates the ability to find places successfully for themselves in the business community.

Of the five graduates who did not obtain a business position during the first six months, two went to business college before going to work.

Table VI
TIME REQUIRED FOR FIRST JOB PLACEMENTS
OF THOSE EMPLOYED

Time	Number	Per cent
Less than six months	120	96
More than six months	<u>5</u>	<u>4</u>
Total	125	100

Table VII
EXTENT OF GRADUATES JOB SATISFACTION
WITH PRESENT JOB

	Number	Per cent
Satisfied	109	96
Doubtful or dissatisfied	<u>5</u>	<u>4</u>
Total	114	100

Ninety-six per cent of the 114 graduates replying to the question, "Do you like your present job?" expressed themselves as satisfied with their present jobs and 4 per cent indicated that they were either dissatisfied or in doubt as to whether they were satisfied or not. Three of the 117 graduates working at the time the study was made did not answer the question. Another factor which affected the reliability of the answers was that most of the graduates knew that the school and employers

maintain close contact. This knowledge could have limited the validity of the method used for obtaining this particular information. However, the comments added by many of the graduates at the end of questionnaires indicate that, at least in a large number of cases, the graduates are more than merely satisfied with their present jobs.

The young graduate shares with the more mature worker the eagerness to be well compensated for his services. As is true of the older worker, a large measure of job satisfaction exists where adequate remuneration is granted, especially when working conditions otherwise are good.

What the individual worker is paid per week, particularly a beginning worker, is not necessarily a reliable index as to his relative worth. It does, nevertheless, tell to some extent what he is worth to his employer or firm. The law of supply and demand must influence any conclusions drawn from this type of data.

The amount of recognition a worker receives in the way of increased remuneration is hardly more significant as an indication of whether he is giving satisfaction on the job or not; however, some estimate of the success of recent graduates may be made from a study of Table VIII.

Out of a total of 117 currently employed in office occupations, 103 received some increase in weekly wages; 14 did not state the amount of their remuneration; and 9 did not receive any increase. The average weekly wage increases over beginning wages for the three classes included in the study are as follows:

1946	-	\$11.84
1947	-	8.78
1948	-	4.89

Table VIII
REMUNERATION RECEIVED BY GRADUATES

Class	Beginning Weekly Wage	Present Weekly Wage	Total Increase Per Week
1946	\$16.00	\$25.00	\$ 9.00
	20.00	48.75	28.75
	20.00	46.50	26.50
	20.00	46.00	26.00
	20.00	44.00	24.00
	20.00	39.50	19.50
	20.00	37.00	17.00
	20.00	35.00	15.00
	24.00	50.00	26.00
	24.00	32.18	8.18
	24.00	30.03	6.03
	25.00	37.00	12.00
	25.00	35.00	10.00
	25.00	34.00	9.00
	25.00	33.00	8.00
	25.00	32.50	7.50
	25.00	27.50	2.50
	26.00	37.00	11.00
	26.00	29.00	3.00
	27.00	31.00	4.00

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Table VIII continued

REMUNERATION RECEIVED BY GRADUATES

Class	Beginning Weekly Wage	Present Weekly Wage	Total Increase Per Week
1946	\$27.00	\$29.00	\$ 2.00
	28.00	43.00	15.00
	28.00	37.00	9.00
	28.00	36.00	8.00
	28.00	36.00	8.00
	28.00	35.00	7.00
	28.50	40.75	12.25
	29.00	40.00	11.00
	29.00	39.00	10.00
	29.00	29.00	None
	Two not mentioned		
1947	\$18.00	\$30.00	\$12.00
	20.00	36.00	15.00
	21.00	36.00	15.00
	22.00	30.00	8.00
	22.00	26.00	4.00
	23.00	30.00	7.00
	24.00	34.00	10.00
	24.00	32.00	8.00
	25.00	33.00	8.00
	25.00	32.00	7.00



Table VIII continued

REMUNERATION RECEIVED BY GRADUATES

Class	Beginning Weekly Wage	Present Weekly Wage	Total Increase Per Week
1947	\$25.00	\$30.00	\$ 5.00
	25.00	30.00	5.00
	25.00	39.00	4.00
	26.00	36.00	10.00
	26.00	30.00	4.00
	27.00	44.00	17.00
	27.00	32.00	5.00
	28.00	44.00	16.00
	28.00	44.00	16.00
	28.00	43.00	15.00
	28.00	42.00	14.00
	28.00	42.00	14.00
	28.00	42.00	14.00
	28.00	39.50	11.50
	28.00	39.50	11.50
	28.00	39.50	11.50
	28.00	39.50	11.50
	28.00	36.00	8.00
	28.00	28.00	none
	31.00	37.50	6.50
	31.25	31.25	none
	32.00	40.00	8.00

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OF THE

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NAME	AGE	SEX	RELATION
1. J. B. C.	25	M	Son
2. J. B. C.	25	M	Son
3. J. B. C.	25	M	Son
4. J. B. C.	25	M	Son
5. J. B. C.	25	M	Son
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92. J. B. C.	25	M	Son
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94. J. B. C.	25	M	Son
95. J. B. C.	25	M	Son
96. J. B. C.	25	M	Son
97. J. B. C.	25	M	Son
98. J. B. C.	25	M	Son
99. J. B. C.	25	M	Son
100. J. B. C.	25	M	Son

Table VIII continued

REMUNERATION RECEIVED BY GRADUATES

Class	Beginning Weekly Wage	Present Weekly Wage	Total Increase Per Week
1947	\$32.00	\$32.00	none
	40.00	40.00	none
	Five not mentioned		
1948	\$18.00	\$22.50	\$ 4.50
	20.00	27.50	7.50
	21.00	26.00	5.00
	22.50	25.00	2.50
	23.00	29.00	6.00
	24.00	26.00	2.00
	24.00	24.00	none
	25.00	35.00	10.00
	25.00	31.00	6.00
	25.00	30.00	5.00
	25.00	30.00	5.00
	25.00	29.00	4.00
	25.00	27.50	2.50
	25.00	25.00	none
	26.00	28.00	2.00
	27.00	29.00	2.00
	27.00	29.00	2.00
	28.00	37.50	9.50
	28.00	37.50	9.50

Table VIII continued
 REMUNERATION RECEIVED BY GRADUATES

Class	Beginning Weekly Wage	Present Weekly Wage	Total Increase Per Week
1948	\$28.00	\$37.25	\$9.25
	28.00	37.25	9.25
	28.00	37.25	9.25
	28.00	37.25	9.25
	28.00	37.25	9.25
	28.00	37.25	9.25
	28.00	37.00	9.00
	28.00	30.00	8.00
	28.00	34.00	6.00
	28.00	34.00	6.00
	28.00	32.00	4.00
	28.00	32.00	4.00
	28.00	32.00	4.00
	29.00	29.00	none
	30.00	34.00	4.00
	30.00	32.00	2.00
	32.50	35.00	2.50
	32.50	32.50	none
	35.00	40.00	5.00
	40.00	50.00	10.00
	Seven not mentioned		

During the year 1946, through the impetus resulting from the decision made by a large local business concern to give substantial increases in pay to its office workers, there followed actions by the majority of other concerns to raise wages. This movement may have affected the amount of the average weekly increase for the class of 1946, especially in the cases of those placed in jobs previous to the above wage adjustments. Consequently, the first seven workers in the 1946 list reporting \$20.00 per week as beginning wage, and who were placed in June, would probably have reported \$28.00 as beginning wage had they been placed three or four months later in the fall. This would change the weekly average increase to \$10.00 per week, instead of \$11.84 for the class of 1946.

On the whole the graduates have been at least financially successful, and this may also explain in part the general "satisfaction" of graduates with their present jobs as indicated in Table VI.

Graduate opinion with respect to the desirability of extending job counseling and job placement services to graduates was decidedly in favor of having the school assume this responsibility.

Table IX
GRADUATE OPINION OF NEED FOR
ADDITIONAL SCHOOL PLACEMENT SERVICES

	Number	Per cent
In favor	117	97
Not in favor	<u>4</u>	<u>3</u>
Total	<u>121</u>	<u>100</u>

The reason for this large vote for additional services, as pointed out in Table IX, may cause some doubt as to whether the replies to job adjustment questions were entirely valid. The widespread movement throughout industrial and community life for supplying more and more advisory services to workers and others may have suggested a "yes" answer to this question. Many workers added comments referring to this question, all of them expressing sound reasons why such services should be available. The reasons expressed, however, were all impersonal.

The school would do well to investigate further the need for extending job counseling services to graduates.

As explained in Chapter I, the community involved in this study contains two post secondary institutions of high standing, offering courses in business subjects to high school graduates. The school maintains friendly relations with these institutions and feels that in many, if not all cases, graduates can secure advanced training beyond their high school preparation which will assist them in becoming more successful workers, and in securing advancement on the job. In many cases, especially in the case of the immature student, advice is given to continue with business college training before seeking permanent employment.

It was, however, of statistical value to find out the extent to which graduates took advantage of additional business training facilities offered by private schools. Thirty-two per cent of those replying to this question sought advanced business training and 86 per cent did not. No provision for distinguishing between day and evening school training was made in preparing for this return; nevertheless, the fact that out of

Table X
NUMBER SECURING ADDITIONAL BUSINESS TRAINING
SINCE LEAVING HIGH SCHOOL

	Number	Per cent
Sought advanced business train.	40	32
Did not seek adv- anced bus. train.	<u>86</u>	<u>68</u>
Total	126	100

134 graduates making returns, 120 obtained employment within six months following graduation, and that 90 of these are still with their first employers as revealed in Tables VI and XI respectively, would indicate that the large majority taking advanced business training did so in evening hours. Five of the above replies were from full-time students in business school. This attitude on the part of graduates may reflect inadequate training for success on the job on the part of the high school, but subsequent data would not indicate that this is true.

The majority of graduates were able to adjust well on their initial jobs according to information contained in Table XI. The assumption could be made from the data furnished in Table XI that the first placements were successful for 77 per cent of the graduates, granted that these employees were content on the job. That they probably were was indicated in Table VII referred to earlier in this chapter.

Table XI
NUMBER OF GRADUATES
REMAINING WITH ORIGINAL EMPLOYERS

	Number	Per cent
With original employer	90	77
Employed by one other employer	19	16
Employed by two other employers	6	5
Employed by three other employers	<u>2</u>	<u>2</u>
Total	117	100

One hundred seventeen graduates replied to the question, "Do you feel that high school preparation was adequate for success on your present job?"

Table XII
GRADUATE SATISFACTION WITH HIGH SCHOOL PREPARATION
IN BUSINESS SUBJECTS

	Number	Per cent
Satisfied	100	85
Dissatisfied	<u>17</u>	<u>15</u>
Total	117	100

Eighty-five per cent answered "Yes" to this question. Typical comments from the fifteen who answered "No" follow:

"It depends on the job I think. In my case, school just scratched the surface of what I had to do."

"The little things that you are not taught in school, you are taught on the job. School teaches the principal points - you've got to learn the rest on the job."

"There isn't much more we could learn in school about any special job because every office is different."

"Typing is the only subject which has helped me in my job. In fact no school teaches that which I'm doing. It is based strictly on time, and experience with cotton."

In the above cases, the interpretation of the question was taken very literally to mean the degree to which day school training prepared very specifically for the needs of each particular job. The 100 "Yes" answers, while very heartening, do not indicate that the present program of business education is not in need of improvement in the opinion of the graduates, for many who answered "Yes" added very constructive comments qualifying their answers. In fact, these comments furnished the most helpful of any of the replies. The following are some of the more representative remarks made:

"I think we should not try to cover so much in such a short time; more individual help is needed."

"Pupils should receive more training in personality development and good grooming."

"It would help if students received more training in meeting people and in how to receive callers."

"More training should be given in typing figures."

"I think they should learn tabulation by estimation. In the office you have no time to count letters out."

"I think more responsibility should be given the pupil. I found it hard to make decisions and do things on my own when I first went to work."

"I think that a little more training in speaking to people like salesmen and other visitors would be desirable. I have to get information from salesmen, such as the type of product they sell in order that they may see the right person. I found it difficult at first, for I was shy and got tongue-tied."

"More mental calculation with figures would help."

Two general types of occupational information were also sought from the data sheets. It was felt important to find out whether graduates were employed mostly in small or large offices, or whether they were working in offices varied in size.

Table XIII

DISTRIBUTION OF GRADUATES
IN LARGE AND SMALL OFFICES

Size of Office (No. of employees)	Number Employed	Per cent
1 to 4	28	25
4 to 50	39	35
51 to 100	17	15
101 to 500	<u>28</u>	<u>25</u>
Total	112	100

Table XIII indicates that graduates obtain employment in offices ranging from the very small to the very large, with no central tendency manifesting itself as far as various sizes are concerned. Perhaps the only important conclusion having significance from the teaching point of view is that most graduates are employed in offices employing four or more clerks. This in turn would influence decisions in regard to need for acquiring a large variety of office skills in order to be successful on most jobs.

The second of the two types of data referred to above was the distribution of graduates in various types of industries and businesses.

Table XIV

TYPES OF BUSINESSES EMPLOYING HIGH SCHOOL GRADUATES
IN BEGINNING OFFICE JOBS

Type of Business	Number	Per cent
Manufacturing	67	56
Retail	13	11
Financial	12	10
Professional	7	6
Public Utilities	7	6
Public Welfare and Hospitals	5	4
Wholesale	3	2
Miscellaneous	<u>5</u>	<u>4</u>
Total	119	99

By far the greatest per cent of graduates were employed in manufacturing offices as indicated in Table XIV. Sixty-seven per cent were employed by this type of business. Retailing and financial types of concerns employ the next highest percentage of graduates, 13 and 12 per cent respectively. Seven per cent were employed in professional offices, and in public utilities. Hospitals and social welfare agencies employed 5 per cent; wholesale concerns, 3 per cent; and the rest, 5 per cent, were employed in miscellaneous businesses.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical analysis performed.

3. The third part of the document presents the results of the study. It includes a series of tables and graphs that illustrate the findings of the research. The data shows a clear trend of increasing activity over time.

4. The fourth part of the document discusses the implications of the findings. It suggests that the results have significant implications for the field of study and may lead to further research in this area.

5. The fifth part of the document concludes the study. It summarizes the key findings and provides a final statement on the importance of the research.

CHAPTER VI

RESULTS OF RETURNS FROM CHECK LISTS

Since the major purpose of this study was to determine those activities most commonly performed by recent business graduates engaged in beginning office occupations, a check list was selected as the best type of available instrument for collecting this type of data.

One hundred seventeen of the 134 making returns filled in check list forms. On four of the check lists returned practically all the activities listed were checked as having been performed, which indicated that the instructions were misunderstood on the part of those concerned. These four check lists were, of course, disregarded when returns were tabulated. The remaining 113 check lists were tabulated in the form shown in Table XV in which activities were listed in the order of total frequencies, starting with the highest frequency. This table includes only the 82 activities listed in the check list forms sent out, since the duties added by those replying were specialized to the various offices concerned, and were not commonly performed duties.

In two cases, girls reported "Typing bills of lading" as being performed more than half of every day, but in both cases they felt that this activity should be learned on the job. This activity might have been included under item 1, "Filling in printed forms," on page 1 of the check list form. The following is a partial list of duties added by graduates to mimeographed list of 82 duties.

"Costing orders"	"Entering shipment vouchers"
"Posting production"	"Figuring weekly and monthly reports"
"I. B. M. reproducer"	
"I. B. M. sorter"	"Recording orders in Kardex"
"Working with cylinders"	"Making out consumption book"
"Recordak"	"Answering teletalk machine"
"Taking care of vault"	"Typing export papers"
"Keep record of car repairs"	"Formats"
"Dictate letters occasionally"	"Periodic stencil reports"
"I close bills of material and figure cost of making the machines"	"Masters for making prints on Ozalid Machine"
	"Keeping customer lists up to date"

An examination of the duties added under the various check list classifications showed no activity frequencies not already provided for in the check list form; consequently, no items were added to original list of 82 duties when the tabulations were set up summarizing data.

In Table XV the "Rank No." indicates the relative rank number of the activities performed in the order of total frequencies. The "Total frequency" column represents the total of the various frequencies for each activity, which are listed under the following five headings: "Done more than half of every day," "Done less than half of every day," "Done often through the week," "Done occasionally through the week," "Done monthly or less often."

The opinions of the graduates as to whether the job activity performed should be taught in school, on the job, or both in school and

Table XV

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
60	1	Filing alphabetically by name	69	12	16	26	7	8	37	6	20
1	2	Filling in printed forms	68	11	10	12	15	20	16	16	34
5	3.5	Addressing envelopes	66	5	14	21	17	9	42	4	18
41	3.5	Handl. tel. calls for emp.	66	21	11	22	6	6	11	23	27
2	5	Copying from handwriting	62	9	9	16	18	10	29	10	20
72	6	Answering telephone	59	17	15	14	9	4	11	24	19
42	7	Burroughs adding machine	57	17	12	7	11	10	42	0	13
73	8	Fold. let. and insert. in env.	51	10	10	17	7	7	30	7	11
4	9	Bills and invoices	49	12	6	14	4	13	15	14	16
64	10.5	Preparing material for filing	47	9	12	16	5	5	24	7	13
15	10.5	Multiple carbon packs	47	9	5	9	11	13	28	1	17
63	12	Numeric filing	45	7	14	15	3	6	25	5	11
8	13.5	Tabulation and statist. work	43	4	4	7	10	18	27	0	14
3	13.5	Copying from roughdraft	43	5	1	6	11	20	25	3	13
9	15	Manuscripts and reports	40	4	2	7	6	21	15	5	17
44	16.5	Monroe, Marchant, or Frieden	38	13	7	4	7	7	18	4	13

TABLE I	
Summary of the results of the experiments	
Experiment	Results
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Table XV continued

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
40	16.5	Office housekeeping	38	3	5	19	8	3	13	13	11
7	18	Index cards (3 x 5)	37	1	5	7	8	16	19	3	12
13	19	Interoffice correspondence	36	8	5	10	7	6	7	13	15
78	20.5	Meet. callers and rec. clients	35	11	3	8	9	4	7	6	19
37	20.5	Composing let. at typewriter	35	2	5	9	9	10	24	2	6
67	22.5	Open., sort., and distrib. mail	33	8	9	6	5	5	4	17	10
12	22.5	Form letters	33	5	3	6	9	10	12	8	11
39	25	Tak. care off. dur. empl. abs.	29	6	1	4	7	11	4	13	11
77	25	Making out receipts	29	11	4	7	4	3	11	9	5
6	25	Postal cards	29	2	0	6	7	14	15	4	7
76	27.5	Waiting on customers	27	12	6	4	4	1	4	12	8
45	27.5	Comptometer for addition	27	13	6	3	2	3	20	1	3
71	29	Inventory and stock work	26	5	2	2	4	13	0	17	7
74	31.5	Making bank deposits	25	2	8	5	9	1	7	10	6
82	31.5	Writing orders	25	2	5	7	5	6	3	12	8
66	31.5	Keeping follow-up file	25	6	5	9	3	2	15	4	6

MEMORANDUM FOR THE RECORD

Subject: [Illegible]

Date: [Illegible]

No.	Name	Remarks
1	[Illegible]	[Illegible]
2	[Illegible]	[Illegible]
3	[Illegible]	[Illegible]
4	[Illegible]	[Illegible]
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Table XV continued

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
10	31.5	Legal forms	25	3	2	2	4	14	4	7	14
79	35.5	Figuring and checking invoices	24	11	6	3	1	3	8	8	7
11	35.5	Mailing lists	24	1	0	4	4	15	6	12	5
23	35.5	Balancing cash	24	4	12	3	2	3	5	7	9
46	35.5	Comptometer for multiplying	24	14	6	2	0	2	16	1	3
36	38	Tak. dict. direct. on type.	23	0	1	8	4	10	13	6	3
27	39.5	Taking trial balance	22	0	2	3	1	16	5	2	13
47	39.5	Comptometer for subtracting	22	10	5	3	1	3	15	0	3
65	41	Cross referencing	21	5	3	3	5	5	13	1	7
25	43	Posting to acct's. rec. ledger	20	3	8	3	1	5	10	1	8
81	43	Posting checks and deposits	20	6	6	5	1	2	6	6	5
34	43	Tak. dict. in short. & trans.	20	5	3	6	1	5	18	0	1
18	46.5	General journal entries	19	4	6	3	1	5	6	2	9
69	46.5	Cashier work	19	7	4	3	3	2	1	12	4
22	47.5	Purchases journal entries	18	3	3	7	3	2	7	2	8
51	47.5	Electric typewriter	18	4	2	4	3	5	4	7	7

Table XV continued

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
16	50	Cutting stencils	17	1	0	7	2	7	8	0	9
21	50	Sales journal entries	17	3	5	5	2	2	5	2	9
61	50	Alphabetic by subject	17	3	3	6	4	1	10	1	6
20	52.5	Petty cash book entries	16	2	5	6	2	1	7	1	7
31	52.5	Making Government reports	16	0	0	2	2	12	2	6	7
29	56.5	Balance sheet	15	1	2	2	1	9	4	2	7
26	56.5	Posting to acct's. pay. ledger	15	3	4	2	1	5	5	0	9
28	56.5	Statement of Profit and Loss	15	1	1	1	0	12	4	0	8
14	56.5	Telegrams and cablegrams	15	2	2	2	3	6	2	7	6
48	56.5	Comptometer for dividing	15	6	4	2	2	1	9	0	2
75	56.5	Keeping a checkbook	15	2	4	6	3	0	9	1	3
55	62	Checkwriter	14	1	2	4	2	5	3	7	4
17	62	Mast. shts. for gelatin and liquid duplicators	14	1	0	1	3	9	6	2	6
62	62	Alphabetic filing by location	14	4	2	5	3	0	8	2	4
24	63.5	Posting to general ledger	13	4	2	3	0	4	4	1	7
59	63.5	Telephone switchboard	13	4	3	3	2	1	0	13	0

Table XV continued

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
70	65.5	Price marking	12	3	3	2	3	1	0	10	2
68	65.5	Timekeeping	12	4	3	1	3	1	1	7	4
50	68.5	Bookkeeping machine operation	11	4	3	0	3	1	1	6	4
19	68.5	Combined Nat'l. Cash Register Cash Book	11	2	5	2	1	1	3	1	5
43	68.5	Burroughs add. statement mach.	11	2	5	1	0	3	4	4	3
35	68.5	Transcribing from records	11	0	0	4	1	6	6	1	4
30	73.5	Preparing expense accounts	10	0	2	1	1	6	3	1	5
53	73.5	Teletype machine	10	1	2	2	2	3	2	7	0
56	73.5	Mimeograph	10	1	0	4	2	3	5	2	3
80	73.5	Arr. and post. checks from clearinghouse	10	4	2	1	1	2	2	3	4
38	73.5	Ordering office supplies	10	0	1	1	4	4	0	6	3
33	73.5	Figuring interest on notes, drafts, etc.	10	2	1	5	0	2	4	1	5
54	77	Addressograph	9	0	1	1	2	5	2	3	3
58	78	Gelatin duplicator	8	0	0	2	0	6	3	2	2

Table 1

Summary of the results of the experiments conducted during the period from January 1, 1950, to December 31, 1950.

Experimental Data										Total	
Year	Month	Day	Time	Location	Weather	Wind	Temp	Humid	Pressure	Count	Rate
1950	Jan	1	10:00	Field	Sunny	10 mph	65°F	45%	30.0 in	100	1000
1950	Jan	2	10:00	Field	Sunny	12 mph	68°F	48%	30.1 in	120	1200
1950	Jan	3	10:00	Field	Sunny	15 mph	70°F	50%	30.2 in	150	1500
1950	Jan	4	10:00	Field	Sunny	18 mph	72°F	52%	30.3 in	180	1800
1950	Jan	5	10:00	Field	Sunny	20 mph	75°F	55%	30.4 in	200	2000
1950	Jan	6	10:00	Field	Sunny	22 mph	78°F	58%	30.5 in	220	2200
1950	Jan	7	10:00	Field	Sunny	25 mph	80°F	60%	30.6 in	250	2500
1950	Jan	8	10:00	Field	Sunny	28 mph	82°F	62%	30.7 in	280	2800
1950	Jan	9	10:00	Field	Sunny	30 mph	85°F	65%	30.8 in	300	3000
1950	Jan	10	10:00	Field	Sunny	32 mph	88°F	68%	30.9 in	320	3200
1950	Jan	11	10:00	Field	Sunny	35 mph	90°F	70%	31.0 in	350	3500
1950	Jan	12	10:00	Field	Sunny	38 mph	92°F	72%	31.1 in	380	3800
1950	Jan	13	10:00	Field	Sunny	40 mph	95°F	75%	31.2 in	400	4000
1950	Jan	14	10:00	Field	Sunny	42 mph	98°F	78%	31.3 in	420	4200
1950	Jan	15	10:00	Field	Sunny	45 mph	100°F	80%	31.4 in	450	4500
1950	Jan	16	10:00	Field	Sunny	48 mph	102°F	82%	31.5 in	480	4800
1950	Jan	17	10:00	Field	Sunny	50 mph	105°F	85%	31.6 in	500	5000
1950	Jan	18	10:00	Field	Sunny	52 mph	108°F	88%	31.7 in	520	5200
1950	Jan	19	10:00	Field	Sunny	55 mph	110°F	90%	31.8 in	550	5500
1950	Jan	20	10:00	Field	Sunny	58 mph	112°F	92%	31.9 in	580	5800
1950	Jan	21	10:00	Field	Sunny	60 mph	115°F	95%	32.0 in	600	6000
1950	Jan	22	10:00	Field	Sunny	62 mph	118°F	98%	32.1 in	620	6200
1950	Jan	23	10:00	Field	Sunny	65 mph	120°F	100%	32.2 in	650	6500
1950	Jan	24	10:00	Field	Sunny	68 mph	122°F	100%	32.3 in	680	6800
1950	Jan	25	10:00	Field	Sunny	70 mph	125°F	100%	32.4 in	700	7000
1950	Jan	26	10:00	Field	Sunny	72 mph	128°F	100%	32.5 in	720	7200
1950	Jan	27	10:00	Field	Sunny	75 mph	130°F	100%	32.6 in	750	7500
1950	Jan	28	10:00	Field	Sunny	78 mph	132°F	100%	32.7 in	780	7800
1950	Jan	29	10:00	Field	Sunny	80 mph	135°F	100%	32.8 in	800	8000
1950	Jan	30	10:00	Field	Sunny	82 mph	138°F	100%	32.9 in	820	8200
1950	Jan	31	10:00	Field	Sunny	85 mph	140°F	100%	33.0 in	850	8500
1950	Feb	1	10:00	Field	Sunny	88 mph	142°F	100%	33.1 in	880	8800
1950	Feb	2	10:00	Field	Sunny	90 mph	145°F	100%	33.2 in	900	9000
1950	Feb	3	10:00	Field	Sunny	92 mph	148°F	100%	33.3 in	920	9200
1950	Feb	4	10:00	Field	Sunny	95 mph	150°F	100%	33.4 in	950	9500
1950	Feb	5	10:00	Field	Sunny	98 mph	152°F	100%	33.5 in	980	9800
1950	Feb	6	10:00	Field	Sunny	100 mph	155°F	100%	33.6 in	1000	10000
1950	Feb	7	10:00	Field	Sunny	102 mph	158°F	100%	33.7 in	1020	10200
1950	Feb	8	10:00	Field	Sunny	105 mph	160°F	100%	33.8 in	1050	10500
1950	Feb	9	10:00	Field	Sunny	108 mph	162°F	100%	33.9 in	1080	10800
1950	Feb	10	10:00	Field	Sunny	110 mph	165°F	100%	34.0 in	1100	11000
1950	Feb	11	10:00	Field	Sunny	112 mph	168°F	100%	34.1 in	1120	11200
1950	Feb	12	10:00	Field	Sunny	115 mph	170°F	100%	34.2 in	1150	11500
1950	Feb	13	10:00	Field	Sunny	118 mph	172°F	100%	34.3 in	1180	11800
1950	Feb	14	10:00	Field	Sunny	120 mph	175°F	100%	34.4 in	1200	12000
1950	Feb	15	10:00	Field	Sunny	122 mph	178°F	100%	34.5 in	1220	12200
1950	Feb	16	10:00	Field	Sunny	125 mph	180°F	100%	34.6 in	1250	12500
1950	Feb	17	10:00	Field	Sunny	128 mph	182°F	100%	34.7 in	1280	12800
1950	Feb	18	10:00	Field	Sunny	130 mph	185°F	100%	34.8 in	1300	13000
1950	Feb	19	10:00	Field	Sunny	132 mph	188°F	100%	34.9 in	1320	13200
1950	Feb	20	10:00	Field	Sunny	135 mph	190°F	100%	35.0 in	1350	13500
1950	Feb	21	10:00	Field	Sunny	138 mph	192°F	100%	35.1 in	1380	13800
1950	Feb	22	10:00	Field	Sunny	140 mph	195°F	100%	35.2 in	1400	14000
1950	Feb	23	10:00	Field	Sunny	142 mph	198°F	100%	35.3 in	1420	14200
1950	Feb	24	10:00	Field	Sunny	145 mph	200°F	100%	35.4 in	1450	14500
1950	Feb	25	10:00	Field	Sunny	148 mph	202°F	100%	35.5 in	1480	14800
1950	Feb	26	10:00	Field	Sunny	150 mph	205°F	100%	35.6 in	1500	15000
1950	Feb	27	10:00	Field	Sunny	152 mph	208°F	100%	35.7 in	1520	15200
1950	Feb	28	10:00	Field	Sunny	155 mph	210°F	100%	35.8 in	1550	15500
1950	Feb	29	10:00	Field	Sunny	158 mph	212°F	100%	35.9 in	1580	15800
1950	Feb	30	10:00	Field	Sunny	160 mph	215°F	100%	36.0 in	1600	16000
1950	Mar	1	10:00	Field	Sunny	162 mph	218°F	100%	36.1 in	1620	16200
1950	Mar	2	10:00	Field	Sunny	165 mph	220°F	100%	36.2 in	1650	16500
1950	Mar	3	10:00	Field	Sunny	168 mph	222°F	100%	36.3 in	1680	16800
1950	Mar	4	10:00	Field	Sunny	170 mph	225°F	100%	36.4 in	1700	17000
1950	Mar	5	10:00	Field	Sunny	172 mph	228°F	100%	36.5 in	1720	17200
1950	Mar	6	10:00	Field	Sunny	175 mph	230°F	100%	36.6 in	1750	17500
1950	Mar	7	10:00	Field	Sunny	178 mph	232°F	100%	36.7 in	1780	17800
1950	Mar	8	10:00	Field	Sunny	180 mph	235°F	100%	36.8 in	1800	18000
1950	Mar	9	10:00	Field	Sunny	182 mph	238°F	100%	36.9 in	1820	18200
1950	Mar	10	10:00	Field	Sunny	185 mph	240°F	100%	37.0 in	1850	18500
1950	Mar	11	10:00	Field	Sunny	188 mph	242°F	100%	37.1 in	1880	18800
1950	Mar	12	10:00	Field	Sunny	190 mph	245°F	100%	37.2 in	1900	19000
1950	Mar	13	10:00	Field	Sunny	192 mph	248°F	100%	37.3 in	1920	19200
1950	Mar	14	10:00	Field	Sunny	195 mph	250°F	100%	37.4 in	1950	19500
1950	Mar	15	10:00	Field	Sunny	198 mph	252°F	100%	37.5 in	1980	19800
1950	Mar	16	10:00	Field	Sunny	200 mph	255°F	100%	37.6 in	2000	20000
1950	Mar	17	10:00	Field	Sunny	202 mph	258°F	100%	37.7 in	2020	20200
1950	Mar	18	10:00	Field	Sunny	205 mph	260°F	100%	37.8 in	2050	20500
1950	Mar	19	10:00	Field	Sunny	208 mph	262°F	100%	37.9 in	2080	20800
1950	Mar	20	10:00	Field	Sunny	210 mph	265°F	100%	38.0 in	2100	21000
1950	Mar	21	10:00	Field	Sunny	212 mph	268°F	100%	38.1 in	2120	21200
1950	Mar	22	10:00	Field	Sunny	215 mph	270°F	100%	38.2 in	2150	21500
1950	Mar	23	10:00	Field	Sunny	218 mph	272°F	100%	38.3 in	2180	21800
1950	Mar	24	10:00	Field	Sunny	220 mph	275°F	100%	38.4 in	2200	22000
1950	Mar	25	10:00	Field	Sunny	222 mph	278°F	100%	38.5 in	2220	22200
1950	Mar	26	10:00	Field	Sunny	225 mph	280°F	100%	38.6 in	2250	22500
1950	Mar	27	10:00	Field	Sunny	228 mph	282°F	100%	38.7 in	2280	22800
1950	Mar	28	10:00	Field	Sunny	230 mph	285°F	100%	38.8 in	2300	23000
1950	Mar	29	10:00	Field	Sunny	232 mph	288°F	100%	38.9 in	2320	23200
1950	Mar	30	10:00	Field	Sunny	235 mph	290°F	100%	39.0 in	2350	23500
1950	Mar	31	10:00	Field	Sunny	238 mph	292°F	100%	39.1 in	2380	23800
1950	Apr	1	10:00	Field	Sunny	240 mph	295°F	100%	39.2 in	2400	24000
1950	Apr	2	10:00	Field	Sunny	242 mph	298°F	100%	39.3 in	2420	24200
1950	Apr	3	10:00	Field	Sunny	245 mph	300°F	100%	39.4 in	2450	24500
1950	Apr	4	10:00	Field	Sunny	248 mph	302°F	100%	39.5 in	2480	24800
1950	Apr	5	10:00	Field	Sunny	250 mph	305°F	100%	39.6 in	2500	25000
1950	Apr	6	10:00	Field	Sunny	252 mph	308°F	100%	39.7 in	2520	25200
1950	Apr	7	10:00	Field	Sunny	255 mph	310°F	100%	39.8 in	2550	25500
1950	Apr	8	10:00	Field	Sunny	258 mph	312°F	100%	39.9 in	2580	25800
1950	Apr	9	10:00	Field	Sunny	260 mph	315°F	100%	40.0 in	2600	26000
1950	Apr	10	10:00	Field	Sunny	262 mph	318°F	100%	40.1 in	2620	26200
1950	Apr	11	10:00	Field	Sunny	265 mph	320°F	100%	40.2 in	2650	26500
1950	Apr	12	10:00	Field	Sunny	268 mph	322°F	100%	40.3 in	2680	26800
1950	Apr	13	10:00	Field	Sunny	270 mph	325°F	100%	40.4 in	2700	27000
1950	Apr	14	10:00	Field	Sunny	272 mph	328°F	100%	40.5 in	2720	27200
1950	Apr	15	10:00	Field	Sunny	275 mph	330°F	100%	40.6 in	2750	27500
1950	Apr	16	10:00	Field	Sunny	278 mph	332°F	100%	40.7 in	2780	27800
1950	Apr	17	10:00	Field	Sunny	280 mph	335°F	100%	40.8 in	2800	28000
1950	Apr	18	10:00	Field	Sunny	282 mph	338°F	100%	40.9 in	2820	28200
1950	Apr	19	10:00	Field	Sunny	285 mph	340°F	100%	41.0 in	2850	28500
1950	Apr	20	10:00	Field	Sunny	288 mph	342°F	100%	41.1 in	2880	28800
1950	Apr	21	10:00	Field	Sunny	290 mph	345°F	100%	41.2 in	2900	29000
1950	Apr	22	10:00	Field	Sunny	292 mph	348°F	100%	41.3 in	2920	29200
1950	Apr	23	10:00	Field	Sunny	295 mph	350°F	100%	41.4 in	2950	29500
1950	Apr	24	10:00	Field	Sunny	298 mph	352°F	100%	41.5 in	2980	29800
1950	Apr	25	10:00	Field	Sunny	300 mph	355°F	100%	41.6 in	3000	30000
1950	Apr	26	10:00	Field	Sunny	302 mph	358°F	100%	41.7 in	3020	30200
1950	Apr	27	10:00	Field	Sunny	305 mph					

Table XV continued

ACTIVITIES PERFORMED BY 120 BEGINNING OFFICE EMPLOYEES
IN ORDER OF FREQUENCY

Activity No.	Rank No.	Activity	Total frequencies	Approx. freq. of Performance					Place to Learn		
				More than half of every day	Less than half of every day	Often through the week	Occasionally through the week	Monthly or less often	In school	On the job	Both in school and on the job
52	79	I. B. M. Key punch machine	6	2	1	2	1	0	0	5	0
32	80	Figuring trade disc. where chain disc. is involved	4	1	0	2	0	1	1	0	3
49	81	Billing machine	3	3	0	0	0	0	0	2	1
57	82	Liquid duplicator	2	0	0	1	1	0	0	1	1

on the job, are reported under appropriate headings.

Table XV shows that the three activities performed by the greatest number of graduates were "Filing alphabetically by name," "Filling in printed forms," and "Addressing envelopes," performed by 69, 68, and 66 graduates respectively out of a total of 113 responding. All three of these should be taught in school, or both in school and on the job, in the opinion of the majority performing the activities.

The activities "Handling telephone calls for employers," and "Answering telephone," closely related, both ranked high in total frequencies. The former was reported by 66 employees, and the latter by 59. The majority of graduates checking these duties believed that they should be taught in school, at least to some extent.

Prominent among high frequency activities were "Copying from handwriting," "Burroughs adding machine operation," and "Folding letters and inserting into envelopes." All of these, in the opinion of over 50 per cent reporting them, should be taught in school.

Well up on the frequency table were "Typing bills and invoices," "Preparing material for filing," "Typing multiple carbon packs," "Numeric filing," "Tabulation and statistical work," "Copying from roughdraft," and "Manuscripts and reports." Almost all of those performing these duties recommended that they be taught in school.

The most commonly used calculating machine was the rotary type Monroe, Marchant, or Frieden. Thirty-eight reported this activity, and 13 of these checked it as being done "More than half of every day." Only 4 of the 38 performing it thought it should be learned "On the job."

A study of Table XV shows that many of the commonly performed duties are of a general clerical nature, involving filing, typing, and office machine operation. Some might be considered "miscellaneous office activities."

Activities applying knowledge and possession of the more specialized skills of bookkeeping and shorthand appear near the middle of the list, certainly farther down than was reported in a similar type of study made in 1941.¹ The bookkeeping activity "Taking trial balance" ranked 39.5, and "Taking dictation in shorthand and transcribing" ranked 43, while "Making balance sheet" and "Statement of profit and loss" both ranked 56.5. Most of the graduates felt, however, that all of these activities should be prepared for in school. One reason for this is that, though infrequently performed, bookkeeping and shorthand are more complex skills, and very difficult if not impossible to learn entirely on the job, especially when not done often.

Use of the mimeograph and other duplicating machines was not expected to appear as infrequently as this table indicates. Use of the mimeograph ranks 73.5, the gelatin duplicator, 78, and the liquid duplicator, 82.

"Transcribing from records" was infrequently performed as the table reveals. Only 11 out of a possible 113 engage in this activity. Also well down on the list of frequencies were "Figuring interest on notes" and "Figuring trade discount where chain discounts are involved."

Use of the Comptometer calculator for the fundamental processes varied considerably in frequencies. Addition was the most commonly used

¹Santamaria, loc. cit.

The first part of the paper discusses the importance of the study and the objectives of the research. It then proceeds to a detailed description of the methodology used, including the selection of participants and the procedures followed. The results of the study are presented in the following section, followed by a discussion of the findings and their implications. The paper concludes with a summary of the main points and suggestions for further research.

process on the Comptometer, and multiplication the next most common. The ranks were 27.5 and 35.5 respectively.

After a careful study of Table XV, the next step was to set up a list of "Significant Activities Performed by Beginning Office Employees Which Should be Taught in School." In preparing Table XVI, the activities were divided into deciles based on frequency. This was done by dividing the 82 activities listed in Table XV into ten as nearly equal graduated sections as possible, ranking the first section "Decile 1," the next "Decile 2," and so on down to "Decile 10." This method was originally used in an office-activity analysis type of study by Charters and Whitley.¹

In order to facilitate the handling of time-frequency data contained in Table XV, the five types of recurrence frequencies listed were combined into three types. Activities performed "More than half of every day" were considered Major Activities. Those done "Less than half of every day" and "Often through the week" were considered as Regular Activities, and those performed "Occasionally through the week" and "Monthly or less often" were considered as Occasional Activities.

To determine the approximate extent to which an activity tended to be "Major" or "Minor" this measure is expressed as a per cent. The sum of the "Major" plus "Regular" activities was divided by the sum of the "Major" plus "Regular" plus "Occasional" frequencies.

¹Charters and Whitley, Analysis of Secretarial Duties and Traits

The first part of the paper discusses the importance of maintaining accurate records of all transactions. It is essential for the business to have a clear and concise record of all income and expenses. This will allow the business to track its financial performance over time and identify areas for improvement. The second part of the paper discusses the importance of maintaining accurate records of all assets and liabilities. This will allow the business to track its net worth over time and identify areas for improvement. The third part of the paper discusses the importance of maintaining accurate records of all taxes paid. This will allow the business to track its tax liability over time and identify areas for improvement. The fourth part of the paper discusses the importance of maintaining accurate records of all debts owed. This will allow the business to track its debt liability over time and identify areas for improvement. The fifth part of the paper discusses the importance of maintaining accurate records of all equity owned. This will allow the business to track its equity over time and identify areas for improvement. The sixth part of the paper discusses the importance of maintaining accurate records of all contracts entered into. This will allow the business to track its contractual obligations over time and identify areas for improvement. The seventh part of the paper discusses the importance of maintaining accurate records of all legal proceedings. This will allow the business to track its legal history over time and identify areas for improvement. The eighth part of the paper discusses the importance of maintaining accurate records of all correspondence. This will allow the business to track its communication over time and identify areas for improvement. The ninth part of the paper discusses the importance of maintaining accurate records of all other documents. This will allow the business to track its overall record over time and identify areas for improvement. The tenth part of the paper discusses the importance of maintaining accurate records of all other information. This will allow the business to track its overall information over time and identify areas for improvement.

Table XVI

SIGNIFICANT ACTIVITIES PERFORMED BY BEGINNING OFFICE EMPLOYEES
FOR WHICH TRAINING SHOULD BE GIVEN IN SCHOOL

Activity No.	Rank No.	Activity	Decile	Total freq.	Major activity (More than half of every day)	Regular activity (Daily or often during week)	Occasional Activ. (Done monthly or infrequently)	$\frac{M+R}{*}$	$\frac{M+R+O}{*}$	School	Job	School and Job	$\frac{s+s^*}{s+l+s}$	Activity Classifi- cation
60	1	Filing alphabetically by name	1	69	12	42	15	78%	78%	37	6	20	90%	Filing
1	2	Filing in printed forms	1	68	11	22	35	49%	49%	16	16	34	76%	Typing
5	3.5	Addressing envelopes	1	66	5	35	26	61%	61%	42	4	18	94%	Typing
41	3.5	Handl. tel. calls for employ.	1	66	21	33	12	82%	82%	11	23	27	62%	Sten.andSec.
2	5	Copying from handwriting	1	62	9	25	28	55%	55%	29	10	20	83%	Typing
72	6	Answering telephone	1	59	17	29	13	78%	78%	11	24	19	56%	Oth.Off.Act.
42	7	Burrughs adding machine	1	57	17	19	21	63%	63%	42	0	13	100%	Off. Machines
73	8	Fold. let. and insert. in env.	1	51	10	27	14	65%	65%	30	7	11	85%	Typing
4	9	Bills and invoices	2	49	12	20	17	65%	65%	15	14	16	69%	Typing
64	10.5	Preparing material for filing	2	47	9	28	10	79%	79%	24	7	13	84%	Filing
15	10.5	Multiple carbon packs	2	47	9	14	24	58%	58%	28	1	17	98%	Typing
63	12	Numeric filing	2	45	7	29	9	80%	80%	25	5	11	88%	Filing
8	13.5	Tabulation and statist. work	2	43	4	11	28	35%	35%	27	0	14	100%	Typing

*The sum of "Major" plus "Regular" activities divided by the total of "Major," "Regular," and "Occasional" activities.

**The sum of "School" plus "School and job" recommendations divided by the total of all "School," "Job," and "School and job" votes.

Date		Description		Amount	
1890	Jan 1	Balance		100.00	
	Feb 1	Received from A. B.		50.00	
	Mar 1	Received from C. D.		25.00	
	Apr 1	Received from E. F.		75.00	
	May 1	Received from G. H.		100.00	
	Jun 1	Received from I. J.		150.00	
	Jul 1	Received from K. L.		200.00	
	Aug 1	Received from M. N.		250.00	
	Sep 1	Received from O. P.		300.00	
	Oct 1	Received from Q. R.		350.00	
	Nov 1	Received from S. T.		400.00	
	Dec 1	Received from U. V.		450.00	
	Total			2000.00	

Table XVI continued

SIGNIFICANT ACTIVITIES PERFORMED BY BEGINNING OFFICE EMPLOYEES
FOR WHICH TRAINING SHOULD BE GIVEN IN SCHOOL

Activity No.	Rank No.	Activity	Decile	Total freq.	Major activity (More than half of every day)	Regular activity (Daily or often during week)	Occasional activity (Done monthly or infrequently)	$\frac{M + R}{M + R + O}$	School	Job	School and Job	$\frac{s + j}{s + j + sj}$	Activity Classifi- cation
3	13.5	Copying from roughdraft	2	43	5	7	31	28%	25	3	13	93%	Typing
9	15	Manuscripts and reports	2	40	4	9	27	33%	15	5	17	86%	Typing
44	16.5	Monroe, Marchant, or Frieden	2	38	13	11	14	63%	18	4	13	89%	Off. Machines
40	16.5	Office housekeeping	3	38	3	24	11	28%	13	13	11	65%	Sten. and Sec.
7	18	Index cards (3 x 5)	3	37	1	12	24	35%	19	3	12	91%	Typing
13	19	Interoffice correspondence	3	36	8	15	13	64%	7	13	15	63%	Typing
78	20.5	Meet. callers and rec. clients	3	35	11	11	13	63%	7	6	19	81%	Oth. Off. Act.
37	20.5	Composing let. at typewriter	3	35	2	14	19	46%	24	2	6	94%	Typing
12	22.5	Form letters	3	33	5	9	19	42%	12	8	11	74%	Typing
39	25	Tak. care of office during employer's absence	3	29	6	5	18	38%	4	13	11	54%	Sten. and Sec.
77	25	Making out receipts	4	29	11	11	7	76%	11	9	5	64%	Oth. Off. Act.
6	25	Postal cards	4	29	2	6	21	28%	15	4	7	85%	Typing

Date		Description		Amount	
1890	Jan 1	Balance		100.00	
	Feb 1	Received from A. B.		50.00	
	Mar 1	Received from C. D.		25.00	
	Apr 1	Received from E. F.		75.00	
	May 1	Received from G. H.		100.00	
	Jun 1	Received from I. J.		150.00	
	Jul 1	Received from K. L.		200.00	
	Aug 1	Received from M. N.		250.00	
	Sep 1	Received from O. P.		300.00	
	Oct 1	Received from Q. R.		350.00	
	Nov 1	Received from S. T.		400.00	
	Dec 1	Received from U. V.		450.00	
	Total			2000.00	

Table XVI continued

SIGNIFICANT ACTIVITIES PERFORMED BY BEGINNING OFFICE EMPLOYEES
FOR WHICH TRAINING SHOULD BE GIVEN IN SCHOOL

Activity No.	Rank No.	Activity	Decile	Total freq.	Major activity (More than half of every day)	Regular activity (Daily or often during week)	Occasional activity (Done monthly or infrequently)	$\frac{M+R}{M+R+O}$	School	Job	School and job	$\frac{s+r+s_1}{s+s_1}$	Activity Classifi- cation
76	27.5	Waiting on customers	4	27	12	10	5	81%	4	12	8	50%	Oth. Off. Act.
45	27.5	Comptometer addition	4	27	13	9	5	81%	20	1	2	96%	Off. Machines
74	31.5	Making bank deposits	4	25	2	13	10	60%	7	10	6	57%	Oth. Off. Act.
82	31.5	Writing orders	4	25	2	12	11	56%	3	12	8	48%	Oth. Off. Act.
66	31.5	Keeping follow-up file	4	25	6	14	5	80%	15	4	6	84%	Filing
10	31.5	Legal forms	5	25	3	4	19	27%	4	7	14	72%	Typing
79	35.5	Figuring and checking invoices	5	24	11	9	4	83%	8	8	7	65%	Oth. Off. Act.
11	35.5	Mailing lists	5	24	1	4	19	24%	6	12	5	48%	Typing
23	35.5	Balancing cash	5	24	4	15	5	79%	5	7	9	67%	Bookkeeping
46	35.5	Comptometer for multiplying	5	24	14	8	2	92%	16	1	3	95%	Off. Machines
36	38	Tak. dict. direct. on type.	5	23	0	9	14	39%	13	6	3	73%	Sten. and Sec.
27	39.5	Taking trial balance	5	22	0	5	17	23%	5	2	13	90%	Bookkeeping
47	39.5	Comptometer for subtracting	5	22	10	8	4	82%	15	0	3	100%	Off. Machines

Table XVI continued

SIGNIFICANT ACTIVITIES PERFORMED BY BEGINNING OFFICE EMPLOYEES
FOR WHICH TRAINING SHOULD BE GIVEN IN SCHOOL

Activity No.	Bank No.	Activity	Decile	Total freq.	Major activity (More than half of every day)	Regular activity (Daily or often during week)	Occasional activity (Done monthly or infrequently)	$\frac{M+R}{M+R+O}$	School	Job	School and Job	$\frac{s+u+s}{s+u+st}$	Activity Classifi- cation
65	41	Cross referencing	5	21	5	6	10	50%	13	1	7	95%	Filing
25	43	Posting to acct's. rec. ledger	6	20	3	11	6	70%	10	1	8	95%	Bookkeeping
81	43	Posting checks and deposits	6	20	6	11	3	85%	6	6	5	65%	Oth. Off. Act.
34	43	Tak. dict. in short. & trans.	6	19	5	9	6	70%	18	0	1	100%	Sten. and Sec.
18	46.5	General journal entries	6	19	4	9	6	68%	6	2	9	88%	Bookkeeping
22	47.5	Purchases journal entries	6	18	3	10	5	72%	7	2	8	88%	Bookkeeping
16	50	Cutting stencils	6	17	1	7	9	47%	8	0	9	100%	Typing
21	50	Sales journal entries	7	17	3	10	4	76%	5	2	9	88%	Bookkeeping
61	50	Alphabetic fil. by subject	7	17	3	9	5	72%	10	1	6	94%	Filing
20	52.5	Petty cash book entries	7	16	2	11	3	81%	7	1	7	93%	Bookkeeping
29	56.5	Balance sheet	7	15	1	4	9	36%	4	2	7	85%	Bookkeeping
26	56.5	Posting to acct's. pay. ledger	7	15	3	6	6	60%	5	0	9	100%	Bookkeeping

Table XVI continued

SIGNIFICANT ACTIVITIES PERFORMED BY BEGINNING OFFICE EMPLOYEES
FOR WHICH TRAINING SHOULD BE GIVEN IN SCHOOL

Activity No.	Rank No.	Activity	Debit	Total Freq.	Major activity (More than half of every day)	Regular activity (Daily or often during week)	Occasional activity (Done monthly or infrequently)	$\frac{M+R}{M+R+O}$	School	Job	Both School and Job	$\frac{s+s_1+s_2}{s+s_1+s_2}$	Activity Classifi- cation
28	56.5	Statement of profit and loss	7	15	1	2	12	20%	4	0	8	100%	Bookkeeping
14	56.5	Telegrams and cablegrams	7	15	2	4	9	40%	2	7	6	53%	Typing
48	56.5	Comptometer for dividing	8	15	6	6	3	80%	9	0	2	100%	Off. Machines
75	56.5	Keeping a checkbook	8	15	2	10	3	87%	9	1	3	92%	Oth. Off.Act.
62	62	Alphabetic filing by location	8	14	4	7	3	79%	8	2	4	86%	Filing
24	63.5	Posting to general ledger	8	13	4	5	4	69%	4	1	7	92%	Bookkeeping
19	68.5	Combined Nat'l. Cash Register Cash Book	9	11	2	7	2	82%	3	1	5	89%	Bookkeeping
35	68.5	Transcribing from records	9	11	0	4	7	36%	6	1	4	91%	Sten.and Sec.
30	73.5	Preparing expense accounts	9	10	0	3	7	30%	3	1	5	89%	Bookkeeping
56	73.5	Mimeograph operator	9	10	1	4	5	50%	5	2	3	80%	Off. Machines
33	73.5	Figuring interest on notes, drafts, etc.	10	10	2	6	2	80%	4	1	5	90%	Bookkeeping

A similar procedure was used in summarizing the data relative to graduate opinion as to whether activities should be taught in school or on the job. Activities listed under "In school" were added to those listed under "In school and on the job," and this sum was divided by the total "In school," "On the job," and "Both in school and on the job" frequencies. This was also done to determine roughly the degree to which graduates felt the activities which they performed should be taught in school.

After these preliminary steps were taken, significant duties in Table XVI were selected from the general frequency list of activities in Table XV, with the following major factors kept in mind:

1. Comparative frequency of performance as expressed in deciles.
2. The extent to which the duty was a major or regularly performed activity by those performing it.
3. The degree to which employees designated that the activity should be emphasized in school instruction.

In no case was an activity included which had three low ratings in these areas, and usually it was not included if it rated low in two areas.

Table XVI points out those duties which rate high in all three categories outlined above. "Filing alphabetically by name," "Addressing envelopes," "Burroughs adding machine operation," and "Folding and inserting letters into envelopes" are all in the first decile frequency and rank high in time-frequency and school-training percentages. None of the first decile items rank low in time-frequency or school-training

ratings, and all were included in the list of significant duties.

"Preparing material for filing," and "Numeric filing," decile 2 activities, rated high in both time-frequency and school-training ratings.

The only decile 2 items rating low in time-frequency were "Tabulation and statistical work," "Copying from rough draft," and "Typing manuscripts and reports." Since all of these received very high percentages of votes for school training, they were considered significant.

The following activities in deciles 3, 4, 5, and 6 were not included in Table XVI because of very low ratings in school-training recommendations: "Opening, sorting, and distributing mail," "Inventory and stock work," and "Cashier work." The "Electric typewriter" item was eliminated, though it received a high school-training vote, because the number performing this activity was not large enough to justify investing in this expensive type of equipment at this time.

"Making Government reports," "Checkwriting," "Typing master sheets for gelatin and liquid duplicators," "Telephone switchboard operation," "Pricemarking," "Time keeping," "Bookkeeping machine operation," "Burroughs state machine," "Teletype machine," "Arranging and posting checks from clearinghouse," "Ordering office supplies," "Addressograph," "Gelatin and liquid duplicator operation," "I. B. M. key-punch," "Billing machine," and "Figuring chain discounts" were eliminated from list of significant duties because they all ranked too low in the time-frequency factor to rate as important duties. School-training ratings ceased to have value below decile 7 except in those activities which rated high as major or regularly performed duties and those which involved some

degree of skill to perform, such as, "Figuring interest on notes," "Comptometer for dividing," or "Keeping a checkbook." Those items below decile 7 which were retained in Table XVI were in this group.

Finally the list of significant duties in Table XVI was reclassified and arranged under the various special headings used in check list form; that is, all typing items were grouped together, bookkeeping items listed together, etc. This type of data presentation should be more useful to teachers and students of individual subjects than the unclassified list in Table XVI.

In preparing Table XVII, only the decile number, single time-frequency, and school-training ratings were included. Teachers of the subjects or topics listed should be able to determine which topics should receive major emphasis, and which should receive minor emphasis in teaching. To aid the classroom teacher a column headed "Degree of Teaching Emphasis" was included. A large letter "M" was used to indicate that the item should receive major emphasis, and a small "m" was used to indicate that the item should receive minor emphasis.

Table XVII
SIGNIFICANT ACTIVITIES CLASSIFIED

Rank	Activity Classification	Decile	Time- freq. Rating in %	School- training Rating in %	Degree of Teach. Emphasis*
<u>TYPING</u>					
1	Filling in printed forms	1	49	76	M
3.5	Addressing envelopes	1	61	94	M
8	Copying from handwriting	1	55	83	M
8	Fold. and insert. letters into envelopes	1	65	85	M
9	Bills and invoices	2	65	69	M
10.5	Multiple carbon packs	2	58	98	M
13.5	Tabulation and statist. work	2	35	100	M
13.5	Copying from rough draft	2	28	93	M
15	Manuscripts and reports	2	33	86	M
18	Index cards (3 x 5)	3	35	91	M
19	Interoffice correspondence	3	64	63	M
20.5	Composing letters at typewriter	3	46	94	M
22.5	Form letters	3	42	74	M
25	Postal cards	4	28	85	m
31.5	Legal forms	5	27	72	m
35.5	Mailing lists	5	24	48	m
50	Cutting stencils	6	47	100	M
56.5	Telegrams and cablegrams	7	40	53	m

*Large letter M indicates which items should receive major emphasis in teaching, and small letter m points out those items which should receive minor emphasis.

THE HISTORY OF THE UNITED STATES

1776	July 4	Independence declared	1776	September 26	Constitution signed
1787	September 17	Constitution ratified	1791	September 16	Bill of Rights adopted
1800	January 1	Washington becomes President	1803	April 30	Louisiana Purchase
1812	June 18	War of 1812 begins	1817	March 4	Monroe becomes President
1820	September 1	Missouri Compromise	1823	December 22	Monroe Doctrine
1828	March 4	Andrew Jackson becomes President	1836	February 22	Texas Annexation
1845	December 19	Texas becomes a state	1848	February 2	Treaty of Guadalupe Hidalgo
1850	September 9	Compromise of 1850	1854	September 18	Fugitive Slave Act
1860	November 6	Abraham Lincoln becomes President	1861	April 9	Fort Sumter falls
1862	September 22	Emancipation Proclamation	1863	July 3	Gettysburg
1864	July 4	Lincoln re-elected	1865	April 9	Lee surrenders
1868	March 30	Reconstruction Act	1870	January 1	Reconstruction ends
1876	March 4	Rutherford B. Hayes becomes President	1877	February 3	Compromise of 1877
1880	September 1	Garfield becomes President	1881	September 19	Garfield assassinated
1885	January 15	Civil Service Reform	1889	March 3	Wheeler becomes President
1890	September 22	Wheeler becomes President	1891	September 16	Wheeler becomes President
1896	November 3	McKinley becomes President	1898	July 4	Spanish-American War
1900	September 8	McKinley becomes President	1901	September 16	McKinley assassinated
1908	September 16	McKinley assassinated	1909	September 16	McKinley assassinated
1912	November 5	Wilson becomes President	1913	September 16	Wilson becomes President
1917	April 6	US enters WWI	1918	November 11	WWI ends
1920	November 3	Coxey becomes President	1921	September 16	Coxey becomes President
1924	November 3	Coxey becomes President	1925	September 16	Coxey becomes President
1928	November 3	Coxey becomes President	1929	September 16	Coxey becomes President
1932	November 3	Coxey becomes President	1933	September 16	Coxey becomes President
1936	November 3	Coxey becomes President	1937	September 16	Coxey becomes President
1940	November 3	Coxey becomes President	1941	September 16	Coxey becomes President
1944	November 3	Coxey becomes President	1945	September 16	Coxey becomes President
1948	November 3	Coxey becomes President	1949	September 16	Coxey becomes President
1952	November 3	Coxey becomes President	1953	September 16	Coxey becomes President
1956	November 3	Coxey becomes President	1957	September 16	Coxey becomes President
1960	November 3	Coxey becomes President	1961	September 16	Coxey becomes President
1964	November 3	Coxey becomes President	1965	September 16	Coxey becomes President
1968	November 3	Coxey becomes President	1969	September 16	Coxey becomes President
1972	November 3	Coxey becomes President	1973	September 16	Coxey becomes President
1976	November 3	Coxey becomes President	1977	September 16	Coxey becomes President
1980	November 3	Coxey becomes President	1981	September 16	Coxey becomes President
1984	November 3	Coxey becomes President	1985	September 16	Coxey becomes President
1988	November 3	Coxey becomes President	1989	September 16	Coxey becomes President
1992	November 3	Coxey becomes President	1993	September 16	Coxey becomes President
1996	November 3	Coxey becomes President	1997	September 16	Coxey becomes President
2000	November 3	Coxey becomes President	2001	September 16	Coxey becomes President
2004	November 3	Coxey becomes President	2005	September 16	Coxey becomes President
2008	November 3	Coxey becomes President	2009	September 16	Coxey becomes President
2012	November 3	Coxey becomes President	2013	September 16	Coxey becomes President
2016	November 3	Coxey becomes President	2017	September 16	Coxey becomes President
2020	November 3	Coxey becomes President	2021	September 16	Coxey becomes President

Table XVII continued
SIGNIFICANT ACTIVITIES CLASSIFIED

Rank	Activity Classification	Decile	Time- freq. Rating in %	School- training Rating in %	Degree of Teach. Emphasis
<u>BOOKKEEPING</u>					
35.5	Balancing cash	5	79	67	m
39.5	Taking trial balance	5	23	90	M
43	Posting to accts. rec. ledger	6	70	95	M
46.5	General journal entries	6	68	88	M
50	Sales journal entries	7	76	88	M
52.5	Petty cash book	7	81	93	M
56.5	Balance sheet	7	36	85	M
56.5	Posting to accts. pay. ledger	7	60	100	M
56.5	Statement of profit and loss	7	20	100	M
63.5	Posting to general ledger	8	69	92	M
68.5	Combined Nat'l. Register Cash Bk.	9	82	89	m
73.5	Preparing expense accounts	9	30	89	m
73.5	Figuring interest on notes and drafts	10	80	90	m
<u>STENOGRAPHIC AND SECRETARIAL</u>					
3.5	Handling telephone calls for employer	1	82	62	M
16.5	Office housekeeping	3	28	65	m
25	Taking care of office during employer's absence	3	38	54	m
38	Taking dict. directly on typewriter	5	39	73	m

1911-1912 Annual Report

General Information		Financial Statement		Summary of Work	
Year	Month	Income	Expenses	Projects	Notes
1911					
Jan	1	100	50	1	1
Feb	1	100	50	1	1
Mar	1	100	50	1	1
Apr	1	100	50	1	1
May	1	100	50	1	1
Jun	1	100	50	1	1
Jul	1	100	50	1	1
Aug	1	100	50	1	1
Sep	1	100	50	1	1
Oct	1	100	50	1	1
Nov	1	100	50	1	1
Dec	1	100	50	1	1
1912					
Jan	1	100	50	1	1
Feb	1	100	50	1	1
Mar	1	100	50	1	1
Apr	1	100	50	1	1
May	1	100	50	1	1
Jun	1	100	50	1	1
Jul	1	100	50	1	1
Aug	1	100	50	1	1
Sep	1	100	50	1	1
Oct	1	100	50	1	1
Nov	1	100	50	1	1
Dec	1	100	50	1	1

Table XVII continued
SIGNIFICANT ACTIVITIES CLASSIFIED

Rank	Activity Classification	Decile	Time- freq. Rating in %	School- training Rating in %	Degree of Teach. Emphasis
43	Taking dictation in shorthand and transcribing	6	70	100	M
68.5	Transcribing from records	9	36	91	m
<u>OFFICE MACHINES</u>					
7	Burroughs adding machine	1	63	100	M
16.5	Monroe, Marchant, or Frieden calculator	2	63	89	M
27.5	Comptometer for addition	4	81	96	M
35.5	Comptometer for multiplication	5	92	95	M
39.5	Comptometer for subtraction	5	82	100	m
56.5	Comptometer for division	5	80	100	m
73.5	Mimeograph operation	9	50	80	m
<u>FILING</u>					
1	Filing alphabetically by name	1	78	90	M
10.5	Preparing material for filing	2	79	84	M
12	Numeric filing	2	80	88	M
31.5	Keeping follow-up file	4	80	84	M
41	Cross-referencing	5	50	94	M
50	Alphabetic filing by subject	7	72	94	m
62	Alphabetic filing by location	8	79	86	m

Table XVII continued
SIGNIFICANT ACTIVITIES CLASSIFIED

Rank	Activity Classification	Decile	Time- freq. Rating in %	School- training Rating in %	Degree of Teach. Emphasis
<u>OTHER OFFICE ACTIVITIES</u>					
6	Answering telephone	1	78	56	M
20.5	Meeting callers and receiving clients	3	63	81	M
25	Making out receipts	4	76	64	M
27.5	Waiting on customers	4	81	50	M
31.5	Making bank deposits	4	60	57	M
31.5	Writing orders	4	56	48	m
35.5	Figuring and checking invoices	5	83	65	M
43	Posting checks and deposits	6	85	65	m
56.5	Keeping a checkbook	8	87	92	m

THE UNIVERSITY OF CHICAGO DEPARTMENT OF CHEMISTRY

EXPERIMENTAL DATA				ANALYSIS	
Run	Temp	Pressure	Time	Yield	Purity
1	100	1.0	1.0	100	95
2	100	1.0	1.0	100	95
3	100	1.0	1.0	100	95
4	100	1.0	1.0	100	95
5	100	1.0	1.0	100	95
6	100	1.0	1.0	100	95
7	100	1.0	1.0	100	95
8	100	1.0	1.0	100	95
9	100	1.0	1.0	100	95
10	100	1.0	1.0	100	95
11	100	1.0	1.0	100	95
12	100	1.0	1.0	100	95
13	100	1.0	1.0	100	95
14	100	1.0	1.0	100	95
15	100	1.0	1.0	100	95
16	100	1.0	1.0	100	95
17	100	1.0	1.0	100	95
18	100	1.0	1.0	100	95
19	100	1.0	1.0	100	95
20	100	1.0	1.0	100	95
21	100	1.0	1.0	100	95
22	100	1.0	1.0	100	95
23	100	1.0	1.0	100	95
24	100	1.0	1.0	100	95
25	100	1.0	1.0	100	95
26	100	1.0	1.0	100	95
27	100	1.0	1.0	100	95
28	100	1.0	1.0	100	95
29	100	1.0	1.0	100	95
30	100	1.0	1.0	100	95
31	100	1.0	1.0	100	95
32	100	1.0	1.0	100	95
33	100	1.0	1.0	100	95
34	100	1.0	1.0	100	95
35	100	1.0	1.0	100	95
36	100	1.0	1.0	100	95
37	100	1.0	1.0	100	95
38	100	1.0	1.0	100	95
39	100	1.0	1.0	100	95
40	100	1.0	1.0	100	95
41	100	1.0	1.0	100	95
42	100	1.0	1.0	100	95
43	100	1.0	1.0	100	95
44	100	1.0	1.0	100	95
45	100	1.0	1.0	100	95
46	100	1.0	1.0	100	95
47	100	1.0	1.0	100	95
48	100	1.0	1.0	100	95
49	100	1.0	1.0	100	95
50	100	1.0	1.0	100	95
51	100	1.0	1.0	100	95
52	100	1.0	1.0	100	95
53	100	1.0	1.0	100	95
54	100	1.0	1.0	100	95
55	100	1.0	1.0	100	95
56	100	1.0	1.0	100	95
57	100	1.0	1.0	100	95
58	100	1.0	1.0	100	95
59	100	1.0	1.0	100	95
60	100	1.0	1.0	100	95
61	100	1.0	1.0	100	95
62	100	1.0	1.0	100	95
63	100	1.0	1.0	100	95
64	100	1.0	1.0	100	95
65	100	1.0	1.0	100	95
66	100	1.0	1.0	100	95
67	100	1.0	1.0	100	95
68	100	1.0	1.0	100	95
69	100	1.0	1.0	100	95
70	100	1.0	1.0	100	95
71	100	1.0	1.0	100	95
72	100	1.0	1.0	100	95
73	100	1.0	1.0	100	95
74	100	1.0	1.0	100	95
75	100	1.0	1.0	100	95
76	100	1.0	1.0	100	95
77	100	1.0	1.0	100	95
78	100	1.0	1.0	100	95
79	100	1.0	1.0	100	95
80	100	1.0	1.0	100	95
81	100	1.0	1.0	100	95
82	100	1.0	1.0	100	95
83	100	1.0	1.0	100	95
84	100	1.0	1.0	100	95
85	100	1.0	1.0	100	95
86	100	1.0	1.0	100	95
87	100	1.0	1.0	100	95
88	100	1.0	1.0	100	95
89	100	1.0	1.0	100	95
90	100	1.0	1.0	100	95
91	100	1.0	1.0	100	95
92	100	1.0	1.0	100	95
93	100	1.0	1.0	100	95
94	100	1.0	1.0	100	95
95	100	1.0	1.0	100	95
96	100	1.0	1.0	100	95
97	100	1.0	1.0	100	95
98	100	1.0	1.0	100	95
99	100	1.0	1.0	100	95
100	100	1.0	1.0	100	95

CHAPTER VII

SUMMARY OF FINDINGS AND CONCLUSIONS

Two main types of data were sought in this study:

A. Data pertaining to job adjustment activities of recent business department graduates of Nashua High School

B. Data pertaining to present office job activities of recent business department graduates

The major findings regarding the job adjustment activities were as follows:

1. The great majority of graduates were placed in office positions in less than six months after graduation. Sixty-six per cent of those placed were referred to their first office jobs by school authorities.

2. Over 87 per cent of those graduates replying to questionnaires were engaged in office-type jobs at the time of this study.

3. The responses indicate that the graduates on the whole adjusted to their jobs in the business community with a minimum amount of difficulty, and with personal satisfaction to themselves.

4. Graduates, on the whole, felt that their high school preparation was adequate to meet their employment and specific job needs.

5. Respondents felt strongly that job counseling services should be extended to serve the needs of graduates after graduation from school.

THE STATE

OF THE

REPUBLIC OF THE UNITED STATES OF AMERICA

IN SENATE, JANUARY 15, 1901.

REPORT

OF THE

COMMISSIONER OF THE GENERAL LAND OFFICE

FOR THE YEAR 1900.

WASHINGTON:

GOVERNMENT PRINTING OFFICE, 1901.

THE COMMISSIONER OF THE GENERAL LAND OFFICE

REPORTS TO THE SENATE AND HOUSE OF REPRESENTATIVES

AND

TO THE PEOPLE OF THE UNITED STATES.

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of the Department of the Interior, at Washington, D. C., this 15th day of January, 1901.

JOHN W. FOSTER, Secretary of the Interior.

Approved: JAMES H. BECK, President of the Senate.

Approved: JAMES H. BECK, President of the House of Representatives.

Approved: JAMES H. BECK, President of the Senate.

Approved: JAMES H. BECK, President of the House of Representatives.

Approved: JAMES H. BECK, President of the Senate.

Approved: JAMES H. BECK, President of the House of Representatives.

Approved: JAMES H. BECK, President of the Senate.

The following findings and conclusions are based on the data pertaining to the job-activity analysis phase of the study:

1. Duties and office activities of a general clerical nature far outnumbered the specialized type of activities, such as stenographic and bookkeeping activities, in both number and degree of frequencies.

2. Typing and filing activities were the most numerous and the most commonly advocated for school training by the graduates.

3. The office machines most frequently used were the Burroughs adding machine, the Monroe or rotary-type calculator, and the Comptometer key-driven calculator. Addition was performed much more frequently than any other process on the Comptometer.

4. Duplicating machine operation was not required on very many beginning office jobs, although preparation for this type of office work received major emphasis in the high school training program at the time of this study.

5. Answering the telephone, meeting callers, office housekeeping, and composing letters at the typewriter are activities which rate high in the list of frequently performed office activities, although these did not receive major emphasis in high school preparation for office work at the time this study was made. Preparation for these activities should be provided for by the school in the opinion of the majority of graduates.

6. While manufacturing types of businesses and large business offices employed the greatest number of high school business course graduates, graduate employment was obtained in a wide variety of offices and business concerns.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the transparency and accountability of the organization. This section also outlines the various methods used to collect and analyze data, ensuring that the information is reliable and up-to-date.

2. The second part of the document focuses on the financial aspects of the organization. It provides a detailed overview of the budget, including the projected income and expenses for the upcoming year. This section also discusses the various financial risks and how they are being managed to ensure the organization's financial stability.

3. The third part of the document addresses the operational aspects of the organization. It describes the various processes and procedures that are in place to ensure the efficient and effective delivery of services. This section also discusses the various challenges that the organization is facing and how they are being addressed.

4. The fourth part of the document discusses the human resources of the organization. It provides a detailed overview of the current staff and the various roles and responsibilities of each employee. This section also discusses the various training and development programs that are in place to ensure that the staff is equipped with the necessary skills and knowledge to perform their duties effectively.

5. The fifth part of the document discusses the legal and regulatory aspects of the organization. It provides a detailed overview of the various laws and regulations that the organization is subject to and how they are being complied with. This section also discusses the various legal risks and how they are being managed to ensure the organization's legal compliance.

6. The sixth part of the document discusses the environmental aspects of the organization. It provides a detailed overview of the various environmental impacts that the organization is having and how they are being managed to ensure the organization's environmental sustainability. This section also discusses the various environmental risks and how they are being managed to ensure the organization's environmental compliance.

7. The seventh part of the document discusses the social aspects of the organization. It provides a detailed overview of the various social impacts that the organization is having and how they are being managed to ensure the organization's social sustainability. This section also discusses the various social risks and how they are being managed to ensure the organization's social compliance.

8. The eighth part of the document discusses the overall performance of the organization. It provides a detailed overview of the various key performance indicators (KPIs) that are being used to measure the organization's performance. This section also discusses the various challenges that the organization is facing and how they are being addressed to ensure the organization's overall success.

7. Very few responses indicated that office activities tend to be specialized in the local community.

CHAPTER VIII

RECOMMENDATIONS FOR IMPROVING THE BUSINESS EDUCATION CURRICULUM AT NASHUA HIGH SCHOOL

1. The only "required" subjects in the business curriculum should be typewriting I, typewriting II, and clerical office practice or similar integrating course. Courses in bookkeeping and stenography should be "elective."

2. The basic core of the business curriculum should be the development of skills in applied typing, filing, rotary- and key-driven calculators, Burroughs adding machine, and business communication.

3. Teachers of typewriting should strive to develop a high degree of skill in those typing activities which are called for most frequently on the job: filling in printed forms, addressing envelopes, folding and inserting letters into envelopes, copying from handwriting and roughdraft material, typing bills and invoices, handling multiple carbon packs, typing tabulation and statistical work, and typing manuscripts and reports.

4. The following filing activities should be stressed in school preparation: filing alphabetically by name, preparing material for filing, numeric filing, keeping follow-up file, and cross referencing.

5. Some provision should be made for training in proper telephone behavior in the office. All students should have opportunity during the school training period for practice in using the telephone under simulated office conditions.

6. The office practice course should include as one of the major units of instruction, "How to properly receive office callers and clients." Practice in the carrying on of office conversations should be given.

7. Provision should be made in both the applied typewriting course and in the office practice course for composing letters at the typewriter. This type of skill is developed gradually and cannot be acquired in a single unit of work.

8. The bookkeeping course of study should be elective and only those students who show aptitude for this type of work should be encouraged to take the course. Pupils should be required to develop a high standard of proficiency in penmanship and figuring skills instead of spending long periods of time in solving involved arithmetic or bookkeeping problems.

9. A study should be made of employer opinion of the effectiveness of the high school training program. A comparison of the data from an employer survey with data secured from an employee survey should yield more valid information than this study alone can provide.

10. The business department should provide with the means at its disposal at the present time some arrangement for continued job counseling services to business graduates which would be available for at least three years after graduation.

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BIBLIOGRAPHY

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APPENDIX

April 20, 1949

Dear

We are making a study of the various office activities being performed by graduates of our business education department for the past three years. As a result of this study, we hope to obtain information which will help us to plan courses of study as closely related to actual job needs as possible.

We are concerned with the answers to such questions as:
What proportion of our graduates actually use shorthand on the job?
What proportion of graduates work in specialized types of jobs, and what proportion in general office work?
Are we placing our teaching emphasis where it belongs - on skills actually required on majority of beginning office jobs?

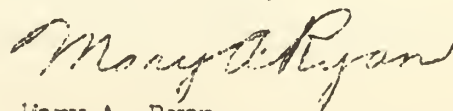
The answers to these and other similar questions can be determined if you will help by filling out the enclosed data sheet and check list at your earliest possible convenience. You are in the best position to supply the data we need to complete the study.

You may be sure that the information received by us will be treated in confidence, and will be used only in making summaries and general reports. Your signature is needed as a means of checking returns received.

We know you have many calls on your time these days, but hope you will welcome this opportunity to render a valuable service to your high school. It should not take more than twenty minutes at the most since probably you are not performing more than a small percentage of the duties listed.

A reply within the next few days would be very much appreciated. A stamped, addressed envelope is enclosed for your convenience.

Sincerely yours,



Mary A. Ryan
Business Education Department
Nashua High School

Enclosures

1. Are you doing office or clerical work at present? Yes No
2. Are you attending college or business school? Yes No
3. If not working now: (a) Are you interested in getting an office job? Yes No
 (b) Have you held a full-time office job since graduation? Yes No
4. If your present job is not your first job since high school graduation, how many office jobs did you hold before getting present job? _____
5. Was first office job secured within six months following graduation? Yes No
6. Through what source was first job secured? (Check one of the following blanks.)
 School authorities _____ Relative or friend _____
 State or U. S. _____ Other source than _____
 Employment Service _____ those listed above _____
 Personal application _____
 direct to employer _____
7. When did you start working on present job? _____
 Month Year
8. Please fill in the following blanks:
 (a) _____ (b) _____
 Name of business where employed Type of business (Shoe, textile, insurance, banking, etc.)
 (c) _____ (d) _____
 Name of employer if in a small business Number of office clerks employed in your office.
 (Approx. no. if in large office)
9. What was starting weekly wage on present job? _____ Weekly wage at present? _____
10. Do you like your present job? Yes No
11. Did you secure additional business training since leaving high school? Yes No
12. Do you feel that the school should be responsible for maintaining a placement service for its graduates where job counseling service would be available? Yes No
13. Do you feel that high school preparation was adequate for success on your present job? Yes No

REMARKS: (Please be frank. We are making a sincere effort to improve our business courses and your comments can be of great help.)

(Use other side of this sheet for additional comments if you wish.)

Year of high school graduation: _____

Your name: _____

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(Place a check "X" to indicate approximate frequency of performance) (Check "X" one.)

Job or activity	Approximate Frequency of Performance					Where should this be taught?		
	More than half of every day	Less than half of every day	Done often through the week	Done occasionally through the week	Done monthly or less often	In school	On the job	Both in school and on the job
Bookkeeping activities cont'd.								
27. Taking trial balance								
28. Statement of profit and loss								
29. Balance sheet								
30. Preparing expense accounts								
31. Making Government reports - state or federal								
32. Figuring trade discount where chain discounts are involved								
33. Figuring interest on notes, drafts, etc.								
Other bookkeeping duties not listed above:								
III Stenographic and secretarial activities:								
34. Taking dictation in shorthand and transcribing								
35. Transcribing from records								
36. Taking dictation directly on typewriter								
37. Composing letters at typewriter								
38. Ordering office supplies								
39. Taking charge of office during employer's absence								
40. Office housekeeping								
41. Handling telephone calls for employer								
Other stenographic or Secretarial duties not listed								

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